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MIND

A QUARTERLY REVIEW OF PSYCHOLOGY AND PHILOSOPHY.

EDITED BY

PROF. G. F. STOUT,

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NEW SERIES. No. 100.] [OCTOBER, 1916.

MIND

A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY

I.—THE PHILOSOPHY OF VLADIMIR SOLOVIEV.

BY PROF. L. M. LOPATIN.

(*Translated from the Russian by* ALEX. BAKSHY.)

[THE following biographical data should be mentioned here as supplementing those stated in the article below. Soloviev was born in 1853 and died in 1900. At the age of twenty-one he was given a chair of Philosophy in the University of Moscow, which he held for three years, and a few years later —again for a short period—held a similar chair in the University of St. Petersburg. He not infrequently appeared before the public as a lecturer, in which capacity he evinced a remarkable gift of eloquence, but the greater part of his life was devoted to literary work. Of his works the most important are *The Critique of Abstract Principles* (1880); *Lectures on God-Mankind; The Spiritual Foundations of Life; The History and Future of Theocracy; La Russie et l'église universelle* (published in French); *The Justification of Good;* the series of articles comprising the two volumes of *The National Question in Russia; Three Discussions on War, Progress and the End of History* (translated into English) and a book of poetry.

The article by Prof. Lopatin—a personal friend of Soloviev since their schooldays and a professor of philosophy in the University of Moscow—was originally read before the Moscow Psychological Society at its meeting of 2nd February, 1901, held in commemoration of Vladimir Soloviev.—A. B].

I.

The time has not yet arrived for passing an impartial and exhaustive judgment on the philosophic activity of Vladimir Sergeyevich Soloviev. The truth of this becomes apparent when one recollects the diverse, contradictory and sometimes extremely strange opinions of his personality and work which appeared in the press after his death. There is one thing, however, about which, it seems, all his critics must agree—no matter whether they accept his theories or do not, whether they see in his philosophical works a clearly indicated path to truth, or whether they, on the contrary, believe that he from his very first steps went astray and that his philosophical ideas are the result of complete misunderstanding. Everybody will agree that in the person of Vladimir Soloviev we have a thinker of singular originality. For my own part, I will repeat what I once before stated at a meeting of the Psychological Society: it is my belief that, if we consider the last twenty-five years, Soloviev was the most original philosopher in the whole of Europe.

Russian philosophical thought since the time of its first infantile struggles in the eighteenth century, dragged out a miserable and exiguous life during a very long period. Its main deficiency lay in the complete lack of originality in speculative work which might express itself in literary form and bring about definite and systematic results. Russian philosophers were merely followers of foreign European thinkers, and followers only of the second rank. Their value and importance in the history of Russian spiritual development is measured not so much by their intellectual power as by the flag they followed. We had followers of Wolff, of the French sensationalists, a few followers of Kant and Fichte, and a good many admirers of Schelling and, particularly, of Hegel. Representatives of theological scholastic metaphysics were not a few, but they also borrowed their ideas from the West. The choice of a European authority to whom one or another Russian philosopher thought best to adhere was determined by the time in which he lived, by the social position he held and the profession he followed. In the 'fifties and 'sixties of last century the admirers of the German idealism gave place to materialists of the Buchner and Vogt type and to positivists of the French and English schools. Amongst these various groups all deriving from foreign sources, the most intellectually original were the Slavophils. Their attitude towards philosophy, however, was rather negative than positive, and in their general philosophical views they confined

themselves to disapproving criticisms of the German idealism, chiefly as expressed in the system of Hegel, and to sufficiently frank admissions that no speculative philosophy is sound unless it is based on the positive Church-creed. Amongst the followers of other schools originality of philosophic thought is met with only as a rare exception. The most brilliant instance of this kind was B. Chicherin, who made an entirely original use of the principles and methods of Hegel's philosophy on the basis of the Cartesian dualism of matter and spirit. Chicherin's ideas, however, received their final literary expression at the time when the philosophical theories of Valdimir Soloviev had already been fully formulated and his first works brought before the public. For this reason Chicherin cannot be regarded either as Soloviev's predecessor or as his teacher.

To understand and appraise at its full value the importance of any given philosopher one must know the environment in which he was brought up and the spiritual atmosphere in which his work was carried on. What were, one may ask, the characteristics of the intellectual life of Russian society at the time when Soloviev's first philosophic questionings and doubts suddenly awoke in his mind? His childhood and youth were passed in the epoch which has been memorable and beneficent for Russia through the universal revival of Russian life which marked the end of the 'fifties and 'sixties. The contribution of that epoch to the public life, literature and science of Russia was tremendous. But philosophy fared badly at that time: the interest it aroused was very meagre, and thanks to its long exclusion from the list of subjects of University training it was very little known. The literary press of the period devoted itself mainly to the popularisation of various books written by followers of materialism, which provided a most perverted view of the true problems of philosophy. Materialism of the crudest brand, preached on occasions with much brilliance but without sufficient knowledge, passed as the final, scientifically established truth which was to be made the basis of solving every problem of life and thought.

The small band of writers with true philosophic education was divided into two groups: one endeavouring to adapt the traditions of the German (principally, the Hegelian) idealism to the new requirements, whilst the other, stronger by far in point of numbers, vigorously fought against all philosophic traditions, against every kind of speculation generally, and saw the only source of authentic knowledge in positive science and the experimental study of nature. As I just

mentioned, at that time the positive movement obtained a firm hold on the public mind: the names of August Comte, John Stuart Mill, Herbert Spencer and Lewes enjoyed universal recognition and widespread popularity. The celebrated law of the three phases of intellectual development of mankind as formulated by Comte was regarded as a final revelation of the inner meaning of human history. This law declares theology and metaphysics to be involuntary delusions of the human mind which will for ever disappear from the arena of history when once the light of scientific knowledge shall have illumined all the phenomena of the observed world. The only way to truth, according to this law, lies in absolute rejection of all attempts at penetrating the real substance of things, and in the limitation of all claims to knowledge to the ascertaining of the actual relations existing amongst various phenomena of nature, *i.e.*, in other words, of natural laws. To justify this point of view the Russian writers of that period were ready to advance the logical and psychological theories of the English thinkers, because of their out-and-out empiricism. On the other hand, the system of Herbert Spencer, logically harmonious and well sustained, which seemed to solve all the problems by means of the sole principle of cosmic evolution, performed the same service for many educated Russians of that time as the system of Hegel had done for the generation of Belinsky. The authority of Darwin was even greater, for his theory of the origin of species was believed to have for ever disposed of all hypotheses which see some inner significance and wisdom in the processes of life, and to have reduced all intelligence and teleological motive in nature to the play of chance in mechanical selection.

Vladimir Soloviev experienced in himself all these influences. Amazingly well-read even when still a youth, possessed of a deep and extremely impressionable mind, he always combined a remarkable independence of judgment with a rare responsiveness to the spiritual interests of the people around him. There was a period in his life when he was a thorough materialist—in his early years, however, when he was barely more than fifteen. He found then the final truth in those very notions against which he afterwards fought with such relentless vigour. Never since have I met a materialist so passionately convinced. He was a typical nihilist of the 'sixties. He believed that in the fundamental principles of materialism there stood revealed that new truth which was to expel and replace all former beliefs, to invert all human ideals and notions, to create an

entirely new, happy and rational life. With that irresistible consistency which always distinguished his intellect, he extended the application of his general ideas to the solution of all the questions that engaged his mind. There was a time when under the spell of Pissarev and his critical ideas and demands, he was violently opposed to the pure poetry of Poushkin, which later he valued so highly. Thoroughly versed in the works of Darwin when still a student, he earnestly believed that the theories of this great naturalist put an end for ever not only to every kind of *teleology*, but to *theology* as well, and generally to all idealistic superstitions. His social ideals at that time were pronouncedly socialistic or even communistic. He carefully studied the works of the famous exponents of socialism and was deeply convinced that the socialist movement was destined to regenerate humanity and to renovate history in a most radical manner. Even at this early period of his life there was always manifest in him the peculiar trait of his mind and character: his utter inability to make compromises with the life of his time, and his unshakeable faith, never influenced by any disappointments, in the supreme power of ideals over real life. I have never met another man so whole-heartedly, one would say, so nobly and simple-heartedly convinced of an imminent and near triumph of absolute good in this world. In the years of his early youth he looked for the realisation of this ideal to a socialistic revolution. In his more mature age he saw it in a theocratic organisation of mankind, in the ultimate victory of the Church, as the guardian of the higher spiritual ideals, over the civil capitalist state, void of principles, hypocritical and utterly opportunist. This triumph was blended in his beliefs and aspirations with the idea of the proximity of the second Advent and of the regeneration of every being through the purification and deification of man. I repeat, the most characteristic feature of Soloviev was his faith in the realisation of all these events in the immediate future. The faith in an historic future provided the deepest ideal motive-power for the past century and for many a mind it held the place of religion. What singled out Soloviev from amongst his contemporaries was the fact that with him this faith assumed most realistic forms, and that at least during the greater part of his life it rested on his religious belief.

Soloviev's adherence to materialistic ideas lasted but a short time. His mind was too deep, his critical tact too great, and, lastly, his nature simply too full of inner idealism, poetic yearnings and religious enthusiasm to admit of his resting satisfied with the pretentious and all-sufficient dogma

of the materialistic system. From the self-complacent dogmatism of materialist theories he was awakened by his extremely varied and serious reading. At the age of sixteen he acquainted himself with the works of Spinoza, carefully read and studied them and soon became their enthusiastic admirer. At first he tried to interpret Spinoza's philosophic ideas in the spirit of materialism, but gradually it became manifest to him that such attempts were doomed to failure. Thanks to Spinoza, God, though as yet in an extremely abstract and naturalistic image, for the first time returned to Soloviev's conception of the world. Spinoza was followed by an enthusiastic reading of Feuerbach, who, though in his latest period much inclined to materialism, never was a dogmatic materialist, and on the whole did not go farther then an indefinite and very capricious preaching of sensationalism in the sphere of theory, and of the cult of mankind in the sphere of practical activity. Simultaneously Soloviev seriously studied the works of John Stuart Mill and absorbed his subtle and original scepticism, which, equally condemning both materialism and spiritualism, insisted on the equally absolute unintelligibility both of the substance of spirit and of the substance of matter. Apparently owing to Mill, Soloviev began to see with the greatest clearness that all was not well with materialism, and that the materialistic doctrine which rudely warred against every belief in a spiritual world as a crass and ignorant illusion, itself rested on an even more crass belief in the absolute, primordial and totally independent reality of matter, whereas neither matter nor anything material is given directly to our consciousness, but is invariably revealed to us through our sensations and notions, *i.e.*, through states of the spiritual or psychic order, which alone can claim to be authentic and indisputably real. Finally, the greatest change in Soloviev was brought about by his studies of Kant, and, particularly, of Schopenhauer: he was affected by the latter as by no other philosopher, before or after. At one period, though it lasted but a short time, Soloviev accepted Schopenhauer in all his entirety, with all his general views and particular opinions, with his boundless pessimism and his vague hopes of atoning the world's sufferings by merging into Nirvana. In Schopenhauer, Soloviev was able to find what no other of his favourite thinkers, with the exception perhaps of Spinoza, could give him, namely the satisfaction of his ever-present religious yearnings, his religious outlook and religious attitude towards life. He was particularly attracted by Schopenhauer's idea of life as a morally-purifying process, the idea

which was rigorously developed in the spirit of speculative Buddhism. It was for this reason that after studing Schopenhauer, Soloviev gave himself passionately to the study of Eastern religions.

But even this enthusiastic acceptance of Schopenhauer was but an episode in the intellectual growth of Soloviev. Partly owing to the works of Edward von Hartmann, and partly to his independent examination, Soloviev became conscious of the speculative defects of Schopenhauer's system —of its incompleteness, one-sidedness and its logical inconsistency. A serious study of the religious history of mankind convinced him that the true religious ideal lay neither in the negative pessimism of the Buddhists, nor in the illusionistic monism of Indian Brahmanism. He began to perceive, ever more clearly, that the intimate faith of his childhood (and he had been a very religious member of a very religious family) was not directed entirely to deceptive phantoms as he had thought, and that it did not at all delude him in its most essential points. At this time he took up the study of the systems of the German idealists: Fichte, Schelling and Hegel, trying to find in them the key to the speculative solution of the problems of being. Schelling's positive philosophy had a particularly strong influence on his thought. He had already gathered from Hartmann the impression that Schelling's system was one which reconciled the extreme points of divergence between Schopenhauer and Hegel. But Soloviev never became as faithful a follower of Schelling as he had previously been of Schopenhauer. A new day had already begun to dawn for him: gradually he evolved from his mind a philosophical system that was unlike the others and entirely his own.

So, I may repeat, Soloviev had his own philosophical system. I even venture to think that it was not in any way inferior to any of the most profound German systems created during the best period of German speculation, that is, the end of the eighteenth and the first half of the nineteenth century. It can even be reasonably maintained that thanks to its later appearance the system of Soloviev was more mature and broader in conception than the creations of his predecessors. He had to take into account all the intermediate process in philosophic and scientific thought which lay between them. He was compelled to abandon, with bitter disappointment, many illusions and untenable hopes which had beguiled earlier thinkers. Finally, in his system he willingly gave place to the newly established truths of science and the newly grown claims of public consciousness, which had been non-existent for their generation.

Soloviev evolved an original and independent system of philosophy. This happened in Russia for the first time. A comparison with Russian literature is naturally brought to mind. Just as Russian literature during a very long period was merely imitative and our writers concerned themselves more with copying the manners, tone, ideas and feelings of their favourite western writers than with portraying life as they saw it themselves, in the same way Russian philosophic thought during a great many years was a mere reflection of the intellectual movements of western Europe, devoid of all independence, weak, desultory and intermittent, whilst Russian philosophic writers were more preoccupied with the opinions of various western celebrities concerning the subjects of philosophic knowledge, than with those subjects themselves.

Poushkin was the first to deal with, not the literature of reality, but reality itself as he understood, saw and experienced it. Through this he became the first creator of a truly artistic Russian literature. Soloviev was the first to write not about other people's opinions on problems of philosophy, but about those very problems, solving them according to their nature and independently of all accepted opinions. Through this he became the first representative not of a reflected foreign, but of a truly Russian philosophic thought. I do not mean to imply by this that in the intellectual life of the Russian people Soloviev holds a place exactly equal in importance to Poushkin's. But the importance of abstract philosophy cannot generally be compared with that of literature. This kept in mind, it remains true that Soloviev was the first Russian truly original philosopher, just as Poushkin was the first Russian national poet.

This comparison may perhaps be carried even further. Just as the contemporaries of Poushkin ceased to understand him, the moment his genius attained to its full power and originality and his works no longer resembled the familiar and universally accepted specimens, similarly Soloviev remained misunderstood, unappreciated and practically alone, until the end of his life, upon those very sides of his philosophy which were the most fundamental, most important and most essential. No doubt the supreme beauty of his utterance, his poetic genius, his wonderful talent as a public writer, the brilliance and pitiless wit of his polemic methods, were all highly appraised. But his philosophical ideas remained a sealed book for the greater majority of the Russian public which inclined to regard them as eccentric expressions of a whimsical though great mind, rather than to see in them a serious product of philosophic thought, born at a certain

moment of its natural and inevitable inner development. Indeed, as a representative of his own conception of the world Soloviev was understood and appreciated only by very few.

Not only in his own country did Soloviev remain alone during the whole of his lifetime. Not less lonely must he have felt himself in the rest of Europe, amongst all the intellectual classes of his time. I do not mean only that outside Russia he was little known and read, as this has ever been the fate of Russian thinkers. He must have felt himself lonely for the simple reason that the current of philosophic thought in western Europe ran in the direction which was utterly opposite to his own beliefs and aspirations. The prevalent frame of mind amongst Russian philosophers which prohibited their understanding Soloviev was itself only a reflection of the philosophical spirit of western Europe. In the true words of Soloviev, the western philosophy during the whole of his lifetime was in a state of long and painful crisis, and even now it still continues to be in that state. All the approaches that the past had suggested towards the solution of the basic philosophic problems were explored to the end, but they did not bring us into the presence of truth: rather did they cause disappointment, perplexity and even utter despair in ever attaining it. The philosophic thought of Europe during the second half of the last century reached only a state of weariness and self-distrust which was in striking and painful contrast with the rapid pace of the positive sciences, with their enormous popularity and the bold hopes they aroused of penetrating all the secrets of cosmic life. The result produced was natural and easy to understand: philosophy capitulated before science. Philosophers gave themselves up to waiting on representatives of the natural sciences and undertook the ungrateful task of proving and demonstrating as speculative truths what learned naturalists advanced as convenient and useful hypotheses. There was created even a special type of metaphysical schematisers of the generalisations of positive sciences. The most striking representative of the philosophers of this type was Herbert Spencer, but by no means the only one: there were and are even now many like him both in Russia and in western Europe. Perhaps what haunts the philosopher of our days most is the fear of finding himself in disagreement with the accepted opinions of learned specialists even when discussing the fundamental and important problems of human knowledge, however little these may have to do with the special qualifications of such scientists. Only in the humble and faithful agreement with the general tendencies of science

is the guarantee of the success of philosophy seen and admitted.

Soloviev by all his intellectual and moral constitution was unable to think and believe in this manner. The most conspicuous feature of his spirit was an extraordinary vigour and boldness of thought, sometimes changing into an unbridled daring. Philosophical problems stood before his mind with such actuality that he could not lose his intellectual courage or be content with solving them by means of platitudes or fashionable formulæ. In comprehension of the actual world he could not restrict himself only to what the physicists and chemists say of it, as he was only too deeply convinced that the substance of reality was far from being limited merely to what could be measured, weighed or felt. On the other hand, he could not compel his thought to stop motionless and satisfied for ever at the borderland where the experience of our senses ceases to raise its voice. His intellect, truthful, penetrating and deep, rebelled against all external vetos, all restraints on the spirit of inquiry, all arbitrarily established spheres fenced off against knowledge and investigation. And it was the same spirit that made him throughout the whole of his life such an ardent champion of freedom of thought and conscience. The failure of the old methods in philosophy provided him only with a further proof of the necessity of finding other, new methods, which had not yet been tried or perhaps had not been explored to the end. Nor could his mind rest content with either materialism, or with physics metamorphosed into speculative metaphysics—in whichever form this might have been carried out, whether in the form of recognition of the principles of physics as the inner substratum of all reality, or whether in the more unassuming form of the neo-Kantian doctrine which admits intelligibility only of what is open to external physical observation, though this solely intelligible may be a mere illusion of our intellect and senses.

On the other hand, Soloviev as clearly saw the utter weakness of the old rationalistic idealism of Hegel and his school which in the infinite variety of cosmic life found only a miraculously incarnated and objectively realised dialectic play of abstract ideas. In these circumstances Soloviev took a step which determined his future philosophic fate.

At a time when mysticism and metaphysics became terms almost of reproach, when spiritualism was regarded in philosophical and psychological circles as a sorry superstition of the outgrown past and only by grace of special indulgence admitted as an unprovable subjective belief or a consoling

dream conditioned however by obligation to accept the mechanical and physiological interpretation of psychic life as the only authentic one—at a time like this Soloviev openly took up his position in philosophic literature as a mystic, metaphysician and spiritualist. Nor did he limit himself to establishing the general philosophic principles which he personally considered to be the only true ones: he moulded his fundamental ideas in an exceptionally complete, living and concrete system in which there were blended into one organic whole an explanation of the main phases of the evolution of nature, an extremely broad and original conception of human history and a highly idealistic interpretation of the moral meaning of life and of the moral task of mankind.

I have already spoken concerning one original trait of Soloviev's mental outlook: his extraordinarily realistic faith in a near and final triumph of truth upon earth. This trait was intimately bound up with another peculiarity of his mind: he generally held a most realistic faith in the complete independence and reality of ideal or spiritual powers in the life of man and nature; he believed in a never-ceasing manifestation of their controlling influences in everything we experience, and in their intimate connexion with man and his inner world. The ideal, the spiritual world was for him not a mere abstract term. In his eyes it appeared imbued with life—a world surpassingly truer and more concrete than that of material dispersion and externality which is open to our restricted, illusion-fraught senses. In his conception of the world Soloviev was in this respect a true Platonist and seemed to have been incapable of any other point of view. His poetic imagination, apparently, contributed not a little to that conception, as in all the phenomena and processes of reality which surrounded him he invariably felt the presence of some inner soul that gave them life. This also explains why the notion of the *Soul of the World* held such a prominent place in his philosophical system; also why in his theory of knowledge he gave to the direct intuitive contemplation of the inner truth of things as known to the artist and the poet a higher place than to sensory experience and abstract speculation: he held that the philosopher, too, will obtain real knowledge only when he has, living in his spirit, this power of higher contemplation of what is truly real in himself. This realistic faith in a spiritual world explains the vitality, integrity and concrete character of Soloviev's system.

The same faith, however, may be held responsible for its chief defect. In the dialectical construction of his world-

conception he regarded all the elements and links in that construction as equally valuable in the sense of objective authenticity, and also as equally essential, considering as logically necessary not only the general principles of his system, which can be indisputably deduced from strictly speculative premises, but also all the applications of those principles in the explanation of every particular manifestation of reality and of every single event of the history of the world and of man, which as such obviously admit of no absolute *a priori* justification. In this respect Soloviev failed to differentiate between statements actually possessing the necessary logical certainty and statements that were merely probable or even possible or conceivable only. In this characteristic defect of Soloviev's philosophy one can see the peculiarity of a poet's mind: since for a poet the general idea of his work, and all the details and particulars of its realisation are both equally dear. On the other hand this defect was a natural consequence of that somewhat exaggerated appreciation with which Soloviev looked on the dialectic method introduced into philosophy by the German idealists, and by Hegel in particular. This method certainly possesses some indisputable and important advantages; but its basic assumption of the possibility of deducing all the particular forms, properties and laws of being, even the fundamental facts of its development from a single wholly abstract principle by means of pure speculation, is by its nature impossible of practical realisation.

Soloviev did not always see and understand this difficulty, and this very fact evinces more than anything else how serious was Hegel's influence on his philosophy.

This influence, however, found its expression only in some of Soloviev's methods. In the contents of his ideas he was a direct antagonist of Hegel and criticised that philosopher's system with almost pitiless banter. Taken in his positive views he, as I have already mentioned, might be said to approach Schelling's second system. Perhaps, even greater likeness could be found between the philosophical ideas of Soloviev and those of the well-known German philosopher of the first half of last century, Franz Baader, though it should be noted in this connexion that Soloviev, apart from his superiority over Baader as a thinker and writer, made his acquaintance with Baader's works at a time when his own ideas had already been completely formed. For this reason no charge of plagiarism can even be discussed, and if anything could be maintained at all this would be the existence of a similar influence which both these thinkers experienced from

Jacob Boehme. Soloviev held in high esteem the works of this original mystic of the seventeenth century (crude, perhaps, but instinct with genius) for their directness and for the depth of their speculative and religious ideas. He also took a lively interest in the works and personality of Swedenborg, and was a great admirer of some of the mystics of the Middle Ages and of those reverend fathers who were remarkable for their speculative and mystical tendencies. Of the ancient philosophers, Plato and the Neo-Platonists, and amongst the latter Plotinus, whom he carefully studied, in particular, had the most powerful influence upon him. Amongst the Russian thinkers the most prominent part in his spiritual development, without doubt, belonged to the Slavophils. In the days of his youth these, particularly in Moscow, formed a compact group which contained not a few men of independent and deep philosophical training. They wrote and published little, but their philosophic views were not seldom marked with considerable originality. From their conversations as well as from the philosophical and theological works of the founders of Slavophilism, Khomyakóv and Kireyévsky, Soloviev in his younger years derived a great deal, which accounted for the fact that when first appearing in the literary arena he was wholly associated with the Slavophil movement. In some respects he remained a Slavophil during the whole of his lifetime, though nobody has dealt such a tremendous blow to Slavophilism as did he when in his merciless polemics against the later epigones of this doctrine he with inimitable subtlety and brilliance reduced to absurdities the basic principles of its historic theory.

It would be an impossible task to state in a short and discursive paper (as ours under the circumstances unavoidably is) the whole system of Soloviev with all its details and nuances, with all the premises and conclusions essential to its inner unity, and also with all the changes which it underwent during his life. Considering the extreme subtlety of Soloviev's dialectics, the enormous variety of methods he sometimes employed for illuminating the same philosophical problems from different sides, and the mosaic complexity of logical sequences in development of one and the same idea, it will be realised that such a paper would, unless accompanied by detailed explanations which would naturally take up some considerable time, represent a dry record of often cryptic schemes and apparently unconnected conclusions. For this reason I propose to state with all possible clearness and simplicity and in their most essential aspects the basic principles which underlay all the details of Soloviev's system,

however much this fluctuated and changed in its separate points from time to time.

II.

The general meaning of Soloviev's philosophical system may be reduced to three main points: (1) the idea of inner spirituality of all being; (2) the idea of absolute all-unity; (3) the idea of God-Mankind.

In his deep and extremely ingenious criticism of the materialistic doctrine Soloviev persistently argues that the external properties of things, such as impenetrability, extension, mobility, etc., do not express their true essence, but only their external relations to each other. At the foundation of every external force there always lies an inner force: all that is material must needs find its basis in the spiritual. For this reason the first principle of things is an absolute and infinite spirit, which also determines the relation between the first principle of things or God, and the world: God is not an absolute indifferent and pure unity excluding from itself all plurality and sunk in itself in its motionless immutability, as he was regarded by the ancient Hindus and the Greek philosophers of the Eleatic school. God is a living spirit and his life is realised in his thought and his will. He is the creative might of all being, the source of the infinitely varied forms of reality. He is the creative Love which gives birth to the universe as something separate from God yet near to him, and destined to reflect in itself the fullness of Divine perfection. Owing to this God is not only the basis of his own single life, but at the same time the source of everything else existing, he is the *All-One Absolute.* The world in space and time, composed of beings that differ from, and are impenetrable to each other, stands in opposition to the world of God in which all is one and inwardly bound up in the one thought, one will and one self-consciousness of the absolute spirit. This opposition severs the world from God and provides the cause of the harrowing and painful struggle within it and of the supremacy which the blind elemental powers enjoy in it. Such is the world as given to our observation, but such it must not be. God is Love. He wants good and not evil, harmony and not strife. He created the world as his living image and not as his denial. The world must become worthy of the Will which gave it existence, it must assume to itself the highest good, the highest truth, the highest beauty. The inner significance of the cosmic-process consists in the gradual realisation of this object—in the gradual submission of the chaotic principle of

nature to Divine Might and of its as gradual assimilation of Divine Spirit. Its completion is attained by the world-process in man, who is already a true image of God, since by means of his reason he can penetrate to the ideal substance of reality. Man is the living incarnation of Deity in the material world, and he may be called the *Second Absolute*. In order to become this incarnation, however, man has to rise above sensual, egotistic motives and to make his own the will of God. Then he will become a *God-Man*. Christ was such a God-Man and for this reason his personality formed the central-point in world-history. But the purpose of men is that of attaining to greater purity and holiness, and not only in their capacity of private individuals but also as a social organisation. When this is realised the whole of nature will experience a metamorphosis: the material division and the blind elemental struggle will disappear from it, and it will be transformed into a luminous embodiment of the kingdom of purified spirits joined in the one life of the absolute spirit. The moral demands made upon men are determined by this supreme object of their existence. Freedom, equality and brotherhood, these are the foundations of moral life, in which the most indefeasible human rights and the most irrevocable human duties take their roots.

Coming now to a more detailed statement of Soloviev's philosophical ideas, I have to reiterate that he arrived at his peculiar mystico-idealistic system after he had experienced a complete disappointment in materialism and positivism, and, on the other hand, after he had carefully studied the rationalistic systems of the German idealists of the first half of the nineteenth century. By reason of this, criticism of realism in its various forms and of abstract rationalism occupies a most important place in his works. The development of his thought in this respect, taken in its broadest outlines and inevitably condensed, may be stated as follows.[1]

Human thought commences with a naive faith in everything of which we obtain evidence from our senses. What man sees, hears, touches or experiences through any other sense he considers as actually existing and as having those very properties which he finds in his sensations: if an object gives a sensation of *redness* it follows that it is itself *red*; if it produces in our tongue a sensation of *bitterness* it means that it is itself *bitter*. From this point of view all the sensations of man are instantly and without further consideration transferred into the world of external reality, independent of

[1] See particularly his *Critique of Abstract Principles*, Chapters xxv.-xl.

the beholder. This point of view may therefore be reasonably called *naive realism*. It is quite natural in itself, but this does not protect it from proving wholly unsound when once it is subjected to the slightest criticism. One and the same thing may produce in different persons entirely different sensations. For instance, the thing which appears warm to one may appear cold to another. Does it follow that the object is warm and cold at one and the same time? To one and the same man the same thing in different moments may give dissimilar sensations, according to the state of mind in which he may happen to be. Thus what seems bitter to-day may appear sweet to-morrow. Does it follow then that when we change, all the objects change with us? Our sensations disappear and again reappear in our consciousness every second, with every turning of our eyes, with every movement of our body. Does it follow that the objects themselves disappear and reappear every moment? It is obvious that if we want to recognise in the external world a reality, independent of ourselves, we must admit in the external objects properties which are different from our sensations.

From the recognition of this truth starts *philosophic realism:* it sets itself to the problem of eliminating from the external reality those qualities which are appearance merely, and retaining those which are inherent in the thing itself. Solutions of this problem in the history of human thought have been many and various, but one of them merits our special attention for its logical consistency, its sharp completeness, its manifold connexions with various hypotheses of positive science, and lastly for the important position it holds in our time. This solution belongs to materialism. Every variety of materialism has two fundamental characteristics: (1) it attaches sole and absolute reality to the external world and regards our own being in all its completeness and significance as an inevitable result of the processes taking place in that world; (2) it removes from the series of definitions of that reality all those relating to the qualitative diversity of our sensations, and to their tonality and, lastly, to our ideal appreciation of them, whilst leaving to reality, as inseparable from it, only the geometrical and mechanical properties of extension, mobility, impenetrability, inertia, etc. Of these, two properties are of special importance as they explain the possibility of the rest: they are *extension* and *impenetrability*. Extended and impenetrable matter is the essence of all things, the only absolute in the world—such is the basic principle of every form of materialism.

In what manner, however, is this absolute to be conceived

of? Is it something that is one in itself, rising above every kind of plurality and complexity, inwardly infinite, unchangeable, complete in itself and self-determining—as the absolute substratum of things is understood in all the other systems of philosophy? But this generally held notion of the absolute is just such as cannot be applied to matter. The latter is extensive, therefore it consists of parts lying in different places and excluding each other. It is impenetrable, but what would be the object of such impenetrability for an absolute that is one and complete in itself, when there is nothing outside it? How and against what could it evince this property of physical impenetrability? Matter is movable. But where would this infinite absolute move when it contains everything within itself and there is nothing beyond itself? And so on. One of the two things must be chosen: either matter is an absolute unity—then all its material properties must be rejected and it ceases to be matter; or, its properties do actually belong to it—then the idea of its absolute unity must be immediately dismissed.

In this their lies the logical necessity of transition from materialism to *atomism*. Materialism can be reasonably maintained only in the form of the atomistic theory. From the atomistic standpoint, absolute reality belongs not to the objective world as a whole, not to matter in all its combinations —as matter is only an aggregate of component particles—but to those very particles which are indivisible and immutable. These indivisible particles, the atoms, are extensive, impenetrable and movable. They are consequently in a state of constant interaction and by their infinitely varying collisions produce all the forms of cosmic life. Even atomism, however, with all the apparent simplicity and clearness of its premises, possesses certain essential defects admitting of no correction, which forbid its acceptance as the final solution of the problem of knowledge. We attribute to atoms a primordial, unconditioned reality, whereas all the properties which we suppose in them flatly contradict such a notion: all the properties of atoms as they are represented by materialism are entirely relative and conditional, indicating only the relations of some atoms to other atoms, but in no way showing what constitutes the reality of atoms taken as such. In point of fact only the actions of atoms in the medium surrounding them are determined by those properties, and not the peculiar properties of atoms which cause the actions. Impenetrability is the capacity possessed by each atom, of excluding every other atom from the space which itself occupies. Every other atom, having collided with the given

atom, will either remain motionless or change the direction of its motion; but it will never enter the space occupied by the first so long as this does not vacate it. This is all that is expressed by the notion of impenetrability: it predicates the possibility or necessity of certain external effects produced in other atoms in the vicinity of the given atom, but says absolutely nothing of the given atom itself. Let us imagine a solitary atom in a complete vacuum. What will its impenetrability mean in such conditions? Apparently, the only property left to it will be its extension. But in what way will this extension differ from the surrounding vacuum? Since the extension of the atom, in so far as this occupies certain space in the universe, stands only for that sphere in space in which it is impenetrable for all other atoms, extension of atoms is merely the limit of their resistance to each other. Similar reasoning applies to all the other properties of atoms: the last basis of their reality proves to be their impenetrability, whilst this latter, in its turn, designates only the phenomena which occur or may occur in atoms as determined by the external actions of other atoms. It thus follows that either the material atom has nothing else except extension and impenetrability, in which case it has no reality of its own; or it is merely a relative symbol of the action of some other atom, this being equally true of all atoms, in which case the material world as a whole will prove to be a world of strange ghosts which somehow affect each other but at the same time have nothing in them and no reality.[1] Or perhaps atoms do have some reality? In that case what must it be?

Impenetrability of atoms is their resistance to each other. Resistance, however, presupposes *impulse:* as regards that which is resisting, the impulse to preserve itself, and as regards that to which resistance is offered, the impulse to act on that other. At the same time impulse presupposes exertion, force. It follows then, that if atoms possess their own inner being this latter must be composed of forces: atoms are, then, living centres of inner forces, or *monads*. But if this is so, atoms in their inner substance are non-extensive; exertions in the form of inner impulse, have no spatial image; extension, as we have seen it, is only the boundary of the atom's resistance, and consequently is only a secondary phenomenon which impulse precedes as its antecedent, and is, therefore, unable to possess the property of extension. A similar argument applies to the pro-

[1] In view of the complex and abstract character of Soloviev's critical considerations, I do not state them here exactly in his own formulæ, though I fully preserve their general meaning.

perty of impenetrability ; impenetrability designates only the external effect of resistance of the given atom on another atom (this latter not being admitted into the other but stopped in its movement). To speak of physical impenetrability as an inner property of any impulses would obviously carry no sense. Yet in extension and impenetrability and in their necessary combination there lies the substance of every thing material. What is then the conclusion? Matter in its inner substance is immaterial, and all matter is a direct realisation of a spiritual basis, since of impulses and exertions we know nothing, except from the inner experience of our spirit. "True being or independent reality belongs only to immaterial centres of living forces, to monads. All the rest is only their product, the complex result of their interrelations and interactions." [1]

This conclusion presents in itself a complete negation of materialism. Moreover, it equally condemns every form of realism generally ; since all realism rests on the assumption of true being belonging only to external reality, whilst Soloviev attributes true being only to the inner life of monads. Furthermore, realism strives to comprehend nature by means of the empirical method, though trying to correct and supplement the evidence of sensory observation, whereas the inner life of monads, with its exertions and forces, is patently closed for any sensory experience, and the notion of it is only the result of speculative necessity and speculative construction. What is then the position of the realist in the face of this conclusion, if he has no inclination to engage in guesswork as to the inner essence of things? He must, of course, try to evade it. At the same time, however, he must admit that the notion of matter suggested by materialism, is composed of contradictory characteristics and instead of explaining reality transforms it into a complete absence of everything real. He must also recognise that materialism is practically as far removed from the direct evidence of sensory experience as is the theory of monads. What experience can ever prove that matter, taken by itself, contains nothing but extension and impenetrability? The materialists reduce all life in the world to movement of atoms. But is it possible to see or touch, or in any other way experience atoms? Obviously, we have in them not an actual fact but only a speculative supposition. There remains the problem : what can be done in order to retain the basis of realistic experience and yet to safeguard oneself from speculative guessing? The

[1] *Critique of Abstract Principles*, pp. 245-246.

answer given is this: it is necessary to renounce for ever the illusory hope of fathoming the essence of matter. Experience gives us only phenomena, so we must restrict ourselves to these. Only phenomena and nothing else can be made the subject of true knowledge—such is the fundamental principle of *phenomenal realism*.[1]

But what are phenomena? These, as far as they are observed by us, are *our sensations*. We observe only in those moments when we see, hear, touch, etc.; and, *vice versa*, what is not experienced by our senses is obviously not observed. Thus the statement: nothing exists for us except phenomena, is changed into the other: nothing exists for us except sensations. What we generally call things are simply various possibilities of our having under certain conditions certain series of sensations in certain combinations. The thought of such possibilities arises in our mind owing to manifold associations established amongst the data of past experience. Under the notion of "things" we conceive of nothing else but these possibilities for us of receiving sensations. Such is the doctrine of one of the most consistent representatives of phenomenalism—John Stuart Mill. *Whose* sensations, however, are actually meant here? It must be perfectly clear that every one of us knows only his own sensations. Consequently, only *my* sensations and nothing else exist for me. All things are only possibilities of *my* sensations, and this applies not only to the inanimate objects of the outside world, but with equal force to all living beings outside me and to all my friends. The people around me are also mere possibilities for me of experiencing this or that sensation. But what does it mean: *my* sensations? What is my Ego? Is it not a fact that I know of myself only from the states of my consciousness? And is not *Ego* only my representation, *i.e.*, one of the phenomena of my psychic life? It thus follows that I must regard even myself merely as a state of my consciousness. Of my *Ego* as a substantive bearer of the phenomena of consciousness I have as little knowledge as of the substance of matter.

Thus, if my knowledge must be limited by experience and has no right to pass beyond its boundaries, I am compelled to admit that "what actually exists are only the phenomena of consciousness, and not of *my* consciousness, since I, as I, do not exist, but of consciousness in general, independently of a conscious being or a real subject of cognition".[2] Reality resides either in phenomena as such or in states of conscious-

[1] *Critique of Abstract Principles*, p. 250. [2] *Ibid.*, p. 303.

ness as such. In this lies the final word of phenomenal realism, but this also contains the judgment which it passes upon itself. A phenomenon or state by itself is, obviously, a *contradictio in adjecto*. What distinguishes phenomenon from substance is just the fact that the first, as contrasted with the second, exists not by itself but only for something else.[1] The same may be said of representations and states. The world consisting of sensations in which nobody perceives anything, of representations by nobody and of nothing represented, of states by nobody experienced—such a world is a meaningless fiction, formed of notions, logically elusive and manifestly contradictory. On the other hand, this point of view is a complete refutation of all knowledge: if all reality is reduced to what we directly experience, no universal knowledge, obligatory for all, can exist. Nor are there even separate minds, as all is contained in my personal consciousness. And at the last resort not even *my* consciousness is left. All without remainder is dissolved into nullity.

Soloviev's criticism of the basic principles of rationalism in the various forms of its historic development is equally penetrating and exhaustive. The scope of this paper does not permit of stating it fully, so I have to content myself with sketching its general outlines. The basic principle of all rationalism is the assertion of complete equivalence between being and thought, of their inner identity. Otherwise it would be impossible to justify the claims of our reason to obtain the truth of things by a purely speculative method, based on abstraction from every given reality. And these claims form the very essence of rationalism. But this supposition of complete correlation between being and thought in its consistent development inevitably leads to the recognition of logical notions of things as all their essence and as the only basis of their reality. In this manner, *rationalism* is changed into *panlogism*. This point of view has found its grandest expression in philosophy in the system of Hegel. For Hegel, pure logical idea, pure notion is the only absolute which realises itself both in the cosmic life and in the vagaries of human history. But marked with genius as was Hegel's attempt to explain all that exists as a dialectic self-development of a pure idea absolutely abstract and presupposing nothing preceding it, it was inevitably doomed to failure in view of the essential impossibility of the task. From the abstract the logical sequence can be only to the abstract; but it appears utterly impossible to explain why an entirely ab-

[1] *Critique of Abstract Principles*, p. 303.

stract idea, by virtue of its purely logical nature, must transform into the material reality of the physical world or the inner reality of the self-conscious human spirit. Such passage is inconceivable, and therefore is *illogical*. There is no passage from the abstract to the real, and this means that pure abstract idea cannot be an absolute basis of reality. On the other hand, the very notion of such pure absolute idea contains in itself a contradiction: it is an idea in which nobody thinks of anything, as it precedes both cognitive subject, and that which is cognised. In this respect it presents a complete analogy to the pure phenomena and pure sensations of realism. The only difference between empirical realism and panlogism lies in that the first dresses this inwardly contradictory assumption of the states of spirit, torn away from spirit itself, in the sensationalistic formulæ, whilst the second does so in the rationalistic ones.

In the deep conviction of Soloviev the truth therefore lies neither in realism, nor in rationalism. It must be looked for between these two extreme standpoints. Cognition must needs refer to some reality independent of itself—it must have an object or else it remains utterly hollow. But this independent reality cannot be limited to the material characteristics, as the realists would have it; it must have a spiritual or ideal nature. On the other hand, it must be thought of as having an inner variety of forms, capable of explaining the diverse character of our experience; at the same time, it must manifest an inner unity without which the unity of the world we perceive would remain incomprehensible.

Having these general conditions in mind, how are we to conceive of the absolute principle of things? As an absolute principle, *i.e.*, one which does not presuppose anything preceding it and does not depend on anything else, it must be *one*, since many would limit and condition each other. Yet it must at the same time be the principle of all plurality and diversity, since in it rests the basis and binding force of the world. In itself it is *one*, but it contains all the might and power of *all*. In this manner the principle of *all-unity* which underlies the whole of Soloviev's system is established. The absolute, God, is not an abstract, but a living unity: it is not negative but positive. A negative unity, *i.e.*, one entirely excluding from itself all plurality, would represent a mere absence of every variety of properties and relations; it would mean a complete negation of everything we regard as reality and life; it would be in every way identical with nullity. On the contrary a positive unity presupposes a con-

crete and active unification of greatly varying contents: it occurs there where we have a vitally unifying and asserting power of diverse manifestations. Such is the unity of God. There must, however, be distinguished in him the one creative might of all, and this *all* as a potentiality ever present in him of his possible actions, of the manifold manifestations of his creative activity. This *all* must be actually given in him, since the creative power of God must manifest itself to itself as a creative power. At the same time this *all*, as combination of many forms of Divine activity, correlative to each other, appears as a conditioned reality both by its inner composition and by its subservient position before the one creative power of God. It thus represents in God what as it were is not Divine. *All* in Deity is its *Other*. All is the world in as much as it is contained in God, inasmuch as it eternally faces God as the ideal image of his creation, since in God and for God all is eternal. Soloviev designates this *all* by the biblical name of God's Wisdom, Sophia. Its presence in God makes him one creative Reason: without it God would not have an object of thought and God cannot be without his reason.

This relation of God to the world which has not yet evolved from him but is already given in him, supplies Soloviev with the basis for his conception of Trinity which in contrast to the views generally held by the theologians, he regards as a provable speculative truth. Three states must always be present in God: (1) By a free act of his will he posits in himself an eternal universe. (2) He contemplates it as something in him distinct from himself. (3) He receives it into his unity as an inwardly indissoluble element of his being and thereby makes it greater than a mere idea or object of contemplation, filling it, as it were, with inner life. These three states exclude each other: inasmuch as God creates an eternal world he does not yet contemplate it as something given in him and at the same time distinct from him. And inasmuch as he only contemplates it he does not yet enter with it into a communion of one absolute life. So these states cannot at one and the same time belong to one and the same subject. Nevertheless they are given in God simultaneously: God cannot be God without uniting in himself all the three; besides no states can appear in God in a successive order as different states in time, as God in all his being is beyond time and in him everything is eternal. How is it possible then to conceive of states which are mutually exclusive, being in one, eternal Deity? This is only possible if we regard the one creative life of Deity, in all its

fundamental states and relations, as realising itself not in one but in three persons amongst which it is divided. The one Deity is primordially given in three hypostases and cannot be given in any other way. As the might by an irrevocable act of will giving birth to the eternal ideal world, it is God-Father. As the reason contemplating this world, it is God-Word (Logos). And, lastly, as the power imparting to this ideal world its eternal inner life, it is Holy Spirit. On the other hand, this eternal world, in its relation to the Divine might which realises it, is in its turn revealed in three aspects: in relation to the Divine Will which posits it, it is *good;* in relation to the Reason which contemplates it, it is *truth;* and in relation to the Spirit which enlivens it, it is *beauty*. Thus, good, truth, and beauty, these highest ideals of human activity, are eternally given in Deity as a primordial reality.[1] As we have already been partly able to see in the basic thought of Soloviev this eternal ideal world, though given in God and making with him one whole, possesses, nevertheless, some independence and has a separate life of its own; Deity obtains in it a real expression of the fullness of its creative might. In this sense it is a living image of God. But as such it manifests itself not in its separate parts but only in all of them combined together: in order to be such an image it must be a living indivisible whole, a perfect organism possessed of one common life for all the elements that go to make it up and of one centre of such life. For this reason, in relation to the eternal world, two unities must be distinguished in God: the primary unity of God himself, as that of the creative foundation of the eternal world, and the secondary, God-originated inner unity of this eternal world, as that of the image of God. The inner centre of this image of God, the vital source of eternal forces innate in the ideal cosmos, is *the soul of the world.* As I mentioned before, this is an extremely important notion in Soloviev's system: owing to this notion, in spite of his strictly Christian and religious outlook he comes within close range of pantheism. A convinced theist in the conception of the absolute principle of things taken in itself, he understands the world's process pantheistically.

What was then, from the point of view of Soloviev, the process by which the material world in space and time was created? In its most general outlines his answer is this: The basic property of God is his *self-definition*, as all the contents of his life are given by himself and are independent

[1] *Lectures on God-Mankind.*

of anything else—nothing outside God actually being in existence; next comes his absolute freedom which is bound up with his self-definition.

The world's soul is a living image of Deity, the Divine essence, as it were, repeated in an eternal ideal creation. Freedom, self-definition, must therefore be as much its own fundamental properties as they are God's, since without them it would fail to be an image of God. If it is free, however, its existence within God, as an indissoluble element of Divine life, depends not only on the will of God, but also on its own free self-definition. It *can* dwell in unity with God, but it *can* also dwell outside this unity making itself the centre and purpose of its being and breaking off thereby from the Divine life. No external power impels it to follow the one or the other course. Its final decision depends entirely on itself, on its pure freedom of action. How did then the present world come to be? The world's soul of its own will effected this act of self-definition, which was an act of secession from the Divine source. Itself, not God, was made the centre of its being—as it resolved to be everything for itself. By this, however, it violated the very meaning of its existence, as all the purpose and foundation of the latter lay in the fact of its having been God's image, issued from God and inwardly bound up with him. This made its falling off from God *eo ipso* its own inner downfall. And with the latter the inner world of which it was the centre, of necessity broke to pieces. For every will in the world was in the last analysis its own will, and so its egotistic will, directed towards itself, transformed itself into egoistic wills of all beings. The world broke up, deprived of the ideal bond which had kept it together, and sank into a state of lacerating war. The reason in the world's soul died out having had no source and no material as the tie which united it to the Divine reason had been torn, and thus the ideal tie which bound together the beings for which the world's soul was the centre, was also rent. There remained in the soul of the world only a suppressed longing after a perfect fullness of being and its unity which it tried to find, but failed.

In this characterisation of the inner state of the world's soul one can easily detect the influence of Schopenhauer's teaching of the blind will as the basis of the cosmic process. The world's soul would have also for ever remained far from the goal of harmonious life, were it not for the help which it received from the ideal action of the Divine reason. God did not lose his reason because his living image — the soul of the world— put itself in a wrong and mistaken position: no

changes are possible for God, as he from eternity contemplates in himself all the possible manifestations of his creative might, as he contemplates in the world's soul not only what it became but also what it must be. For this reason only God is able to evoke before the world's soul the ideal image of the process which must raise it from its downfall and regain for it the ideal fullness of life.

It is God's wish to see such a purification and rebirth of the world, as the essence of the all-one Deity is love.[1] Here again the analogy must be noted which exists between these ideas of Soloviev and the theory of Hartmann who regarded the fundamental condition of the world's process as lying in the interaction of will and thought. The general notion of the creation of the world as the result of a secession of the Divine potency from the Divine unity was doubtless suggested to Soloviev by Schelling. The development of this thought by the two thinkers, however, differs in details so greatly that no question of mere plagiarism can arise. Still less ground would there be for such a charge with regard to Schopenhauer and Hartmann: so immense was the difference in the very manner in which the fundamental principles were treated by Soloviev and these two philosophers.

We thus see that according to Soloviev the cosmic process presents a picture of the gradual conquest and permeation of the world's soul as the elemental basis of cosmic life, by the unifying and vivifying power of the Divine Logos. This process is gradual and extremely difficult. The Divine reason can impart to the world's soul only so much as it is able to hold, and it must be remembered that in the beginning of the cosmic process the state of the world's soul is abnormal, wrong and evil—a state of chaotic disruption, of egotistic self-assertion on the part of all beings, of their complete exclusiveness, their absolute impenetrability for each other. The material world created owing to the fall of the world's soul presents a mutilated, an inverted, as it were, image of the true ideal world: the inner spiritual unity of that eternal world is expressed in the terms of the material world by the purely external unity of *space* filled with atoms impenetrable for each other; its invariably present eternity is expressed in our world by the infinite stream of *time* in which every new coming moment completely excludes all the preceding ones and reduces them to absolute nil (the present came to be only when the past ceased to exist); the absolute freedom and pure self-definition of the spiritual world are expressed

[1] *Lectures on God-Mankind*, pp. 175-181.

in the material world by the iron law of *mechanical causality* according to which no agent can act upon itself, but its every action is inevitably determined by the infinite sequence of causes and material conditions which are not dependent on the agent itself. It was on such a material as this that the spiritualising and vivifying power of Logos had to act in order to make itself felt.[1]

Soloviev's theory of the cosmic process sees three essential phases in the permeation of the elemental chaos by the unifying power of God. These are: (1) *the mechanical unity*, produced by the cosmic gravitation which creates the material body of the universe. The latter's parts, remaining external to each other, are bound together by an unseverable chain and are irresistibly drawn to each other. In this one may see the primary expression of cosmic altruism. The soul of the world obtains its first realisation as a universal unity and glories in its first union with the Divine wisdom.

(2) The second phase is the *dynamic unity*. In this stage the world's soul realises itself in nature in the form of imponderable thin and rarefied matter, the ether, so called. This idealised matter provides a pliant tool for the fashioning actions of the creative Reason. Ether envelops, as if with a net, all the elements of the cosmic body and sets them in infinitely varying relations to each other. The activity of either finds its expression in the phenomena of light, electricity, and other imponderable forces which all represent mere modifications and transformations of one and the same agent. The basic character of this agent is its pure altruism, its unlimited expansion, its extreme impressionability to all external actions.

(3) The third phase is the *organic unity*, which for the first time gives a true image of the all-unity in the material world by means of the ideal union, coherence and all-pervading reasonableness of the parts of a living organism. The organic matter and the imponderable ethereal fluid provide the basis and the medium which enable the power of life to develop its diverse creations. In plants life manifests itself objectively in organic forms; in animals it is also felt; in man it is already understood in its absolute source.[2]

In this theory of three forms of cosmic unity one can doubtless trace the influence on Soloviev of the conceptions of the philosophy of nature developed by the German idealists.

In the creation of man the natural process attains its

[1] *La Russie et l'église universelle*, pp. 231-237. [2] *Ibid.*, pp. 252-254.

supreme aim and its true centre, from which the purification of all that is evil in nature is to proceed. In mankind the perceptive soul of the world becomes a reasoning soul and, having assimilated the cognisable world, embraces every being in an ideal unity. Through man the earth has risen to heaven. It is also through him and his actions that heaven has to descend to the earth and fill it. Through man all the world outside God must become a single living body—an all-complete embodiment of Divine Wisdom. This central position of man is due to the fact that in him for the first time the world's soul finally and inwardly opens itself to the Divine reason and enters with it into a living and intimate unity. The meaning of human existence finds its realisation, firstly, in the ideal inner union of the material potency with Divine action and, secondly, in a free realisation of this union in the all-completeness of the world that is outside God. Thus, the purpose of man lies in imparting sacredness and divinity to what had seceded from God. Man is capable of the deification of nature only because he is inwardly deified himself. For this reason, mankind as the unifying and consecrating power of the natural world, may be called the second absolute. It must be borne in mind, however, that in man the material joins in union with the Divine only under the guidance of its free will. Owing to his dual nature, resulting from the inner interaction between the world's soul and the Divine Logos, man alone is able to retain freedom, and remain independent of God while ever coming to a closer unity with him through a series of conscious efforts and arbitrarily chosen actions. Hence, mankind is only a becoming absolute:[1] mankind is developing and gradually approaching to the realisation of its ideal purpose. Only as a distant ideal of the universal history can we picture to ourselves a complete permeation of the elemental forces of nature in mankind by Divine Logos. Nevertheless in one single instance this complete unity already manifested itself in the world. This occurred in the singular individuality of Jesus Christ. Christ alone is a true God-man, a man directly and mutually united with God.[2] Thereby he becomes the centre and the inner motive power not only in the universal history of mankind but in the cosmic process as well. Christ represents that point in the life of the world from which the universal purification is taking its source: only through him, through his ever-present action on humanity by means of the Church which is his mystic body, the final aim of the

[1] *Critique of Abstract Principles*, Chapter xliv.
[2] *La Russie et l'église universelle*, pp. 256-260.

all-human development can possibly be achieved: the natural mankind will become God-mankind. "It can be easily understood," says Soloviev, "why he made his first appearance *in the midst* of history and not at the end of it. As the object of the world's process is the revelation of the Kingdom of God or of the perfect moral order realised by the new mankind (*which latter is spiritually growing out of God-man*), it is clear that this universal revelation must be preceded by an individual revelation of God-man."[1] Such a revelation of God's Kingdom is attained, not by the individual efforts of men, not by their personal godliness, but by means of a perfect social organisation which would realise the highest truth upon earth not only for private individuals but for the whole of mankind. "The spirit of God in mankind, or the Kingdom of God, for its complete revelation requires a most perfect social organisation which is actually being evolved in the world's history."[2] "The historical process is a long and difficult passage from beast-mankind to God-mankind."[3] When this passage is accomplished the whole world will entirely change—freed for ever from the material dissensions, the external inertia, and the mutual impenetrability of beings. "The appearance of the Kingdom of God does not destroy the lower types of being but installs them in their rightful places; not, however, as independent spheres of being, but as psycho-physical organs of the *collective* universe, which are indissolubly bound up into one whole by an absolute inner solidarity and interaction. This explains why the Kingdom of God is equivalent to the reality of moral order or, what is the same, to the universal resurrection and recomposition of all."[4] It will thus be seen that the painfulness of the world's process and its very breaking out are wholly justified by its end: the infinite all-unity of the Divine life attains to a fuller and more concrete incarnation in the world, which seceded from it and then came back of its own free will, than it would attain in the world blended with it from eternity and for ever, as was the eternal spiritual world before the fall of the world's soul. These considerations account for the fact that in the latest statements made by Soloviev his theory of the creation of the world received a somewhat altered form: the blind chaotic striving after self-affirmation, characteristic of the inner state of the world's soul in the beginning of the cosmic process, is now regarded as much the act of its own free will as the effect of the Divine approving judgment; in the eternal plan of the Divine world-

[1] *Justification of Good*, pp. 252-253.
[2] *Ibid.*, p. 224.
[3] *Ibid.*, p. 226.
[4] *Ibid.*, pp. 254-249.

making it was foreseen as a necessary condition for a free deification of matter.

In entire agreement with these general views, beliefs and hopes were the moral ideals which inspired Soloviev. "*Have God in thyself*"—such is the rule of action which enables us to manifest our inner kinship with God and our capacity as well as determination to possess a free perfection. From this maxim follows the other: "*Treat everything in the manner of God*". "He who has God in himself treats everything as the thought of God sees it." In its final form the absolute principle of morals receives the following expression: "In entire inner agreement with the Divine will and recognising in every one else an absolute importance or value, insomuch as each has the image of God, strive to take as active a part as you can in the work of your own and general perfection for the sake of the final revelation of God's kingdom in the world".[1] The human morality has its basis in three spontaneous impulses of the human nature: the feeling of shame, the feeling of pity and the feeling of reverence. In the feeling of shame there finds its expression the ethical attitude of man to what is inferior to him. It contains a powerful stimulus to a spiritual preservation and self-control, to an inner struggle against every enslavement of our moral personality by the sensuous animal instincts. The feeling of pity determines the moral attitude of man towards other human beings: "Pity is the root of the individual soul from which the moral social relations grow". From it spring justice, mercy and love which supply the principle of true social relations. Lastly, the feeling of reverence expresses the due attitude of man to the highest power and is the source of religion in the individual consciousness. When these three basic moral impulses are harmoniously united in a man and become the masters of his will they create in him the state of mind which makes him a free and worthy worker in the sublime moral order of the universe.[2]

The social ideals held by Soloviev were merely an application to life of his general moral principles. The motto of "freedom, equality and brotherhood" which has been so trite and hackneyed in the mouths of the majority and has become an empty and often cynically ridiculed phrase, this motto for Soloviev was vastly more than mere words. For him it was the most elementary and at the same time the most indispensable foundation of the Christian human life, whose imperativeness cannot be shaken by any considerations. He

[1] *Justification of Good*, pp. 229-230. [2] *Ibid.*, pp. 51-69.

did not regard these notions as mere ideal measures for appraising the actions and feelings of any single man in his private relations to other men. The most essential and most characteristic feature of Soloviev's ethics lies in the fact that for him the law of love, the claims of all human justice, the recognition of the infinite dignity of every human personality are the absolutely imperative criteria of all social measures, all politics, all relations amongst nations. In the precepts of Christian morality we have the absolutely real law of the only true life on earth—are we then to remain for ever in the illusory realm of unrealised dreams, whilst human society lives and develops as if this law has never been found? Man redeemed and purified by Christ is in the first place a *free* man. Are then the external relations in the Christian world to remain opposed to this gift of God? The Christian God is not a hidden God, and he revealed himself in the flesh, doubtless not with the object of lending further support to the opposition between the seen and the unseen. It is impossible to regard as normal that man liberated by living God should become a blind tool of dead objects—a slave of machinery. The Church of Christ imparts a kind of Messianic dignity to every Christian whoever he may be. In this all men are equal and in this there lies the indelible expression of the infinite value of every man: all in their inner essence are equally valuable and each one in the eyes of the rest should have an infinite value. Shall then Christian society raise the accidental and passing fact of inequality by birth or advantage to the state of an absolute principle? True and positive equality (*i.e.*, one which does not exclude a diversity of social functions) like true freedom, reveals and realises itself in solidarity and brotherhood. Christ spread this brotherhood over all the nations. And if the mystic bond of the one Church is true and real, we, who participate in it, all become brothers without distinction of race or nationality. Thus, when in the name of so-called national interests, we kill each other, we are actually and not metaphorically only engaged in fratricide.[1]

Whether we agree or disagree with Soloviev's views on this matter, we must at any rate admit that his ideas were marked with one single peculiarity: he was absolutely unable to understand or to tolerate any double-dealing in morals. He was staunchly convinced that what was just for one human being must be equally just wherever any human actions take place. Hence his broad and humanitarian

[1] *La Russie et l'église universelle*, pp. 325-329.

liberalism which distinguished his verily inspired work as a public writer. Hence his valiant defence of the freedom of speech and thought. Hence, lastly, his sincere and fervent hostility towards narrow nationalism in politics.

III.

I have stated the system of Soloviev only in its most general and dim outlines, not even his system, to be more accurate, but only its logical skeleton, so to speak—its guiding thought. I think, however, that even from this statement one is able to see the broad and original position which forms the basis of Soloviev's philosophic conceptions taken as a whole. The feature about him that appears most striking is the difficulty of classing him in any set category, of labelling him with any accepted name. Soloviev is a theist in his ideas of the primary basis of things, and he is at the same time a pantheist in the conception of the world's process as a becoming absolute. He is a declared monist in the comprehension of the inner essence of things, and he is equally an obvious dualist in his ideas of the fundamental powers controlling the life of the world and mankind. He is a convinced optimist in the general appreciation of the meaning of the human and natural existence; and he is doubtless a pessimist in appraising the actual conditions of universal and human development. He is a representative of the philosophy of pure freedom, inasmuch as he explains all being from the absolute self-definition of God whom nothing impels to act in any prescribed manner; and he is a strict determinist inasmuch as he regards all the cosmic and historical process as predetermined in the inevitable inter-relations of the fundamental factors of reality which called it forth and direct it. Soloviev is a mystic in his teaching of the intuitive character of our cognition of the Divine essence, and he is a rationalist in the manner he understands the speculative problems of philosophy; he is also an empiricist inasmuch as for him all cognition presupposes an actual relationship between the cognising subject and the independent object of cognition, *i.e.*, it presupposes experience in the broad sense of the word. Soloviev is an idealist and spiritualist in his views of the inner essence of things, and at the same time he may be called a realist in so far as he considers space, time and causality in nature not as mere illusions of our consciousness but as possessing a certain independent reality, though relative to ourselves. All these apparently irreconcilable points of view are not bound together in his system in any

external fashion. On the contrary, they clearly presuppose each other and make up an indissoluble organic whole, the union of which was not brought about by a set endeavour, but grew up as a natural consequence of the basic premises of Soloviev's philosophy.

With a mind free and independent before everything else, Soloviev knew no imposed objects for his thought, and his philosophy is entirely free from any bias or partisan spirit. He was never oppressed by the problems which worry so much the philosophers of the idealistic frame of mind, such, for instance, as the necessity of recognising the physical law of conservation of energy as a fundamental law of all being, and of justifying at the same time the independence of spiritual power in the world; or as the problem of admitting at all costs that the mechanical, nowhere interrupted connexion of the movements of material atoms is the only type of causality in the world, and yet of retaining the faith in the deep ideal meaning of life, etc. At the same time Soloviev held the natural sciences in great esteem and was well versed in many of them. Of some of the ideas borrowed from them he made a broad philosophic application; as for instance, of the ideas of evolution, organism, and of organic development. He, however, understood the fundamental difference distinguishing the objects of natural sciences from those of philosophy and the divergence inevitably consequent upon this in the methods of solving those problems: he clearly saw that these two spheres of spirit must follow each its own way. For this very reason he was a creative mind in philosophy, while his fellow-workers in the profession were merely obedient interpreters of somebody else's thoughts.

It is enough to compare Soloviev with one of the most popular and daring modern metaphysicians, Edward Hartmann, to recognise that Soloviev is head and shoulders above his contemporaries. Hartmann was doubtless a man of brilliant intellect and varied learning. And yet his forced and insincere pessimism, his utterly unintelligible and groundless dualism of blind will and thought, which nevertheless in friendly concordance by their mutual interactions create the united life of the world, his impotent fluctuations between spiritualism and materialism in recognising, on the one hand, the inner spirituality of the world's essence, and, on the other hand, its unconscious elemental nature, lastly, his strange pretension to give those metaphysical fancies the air of empirical truth—all these features of Hartmann's philosophical system give it more the appearance of a puerile parody on the ideas of Schelling, Schopenhauer and the other

great representatives of the brilliant period of German philosophy in the nineteenth century, than show it as a serious statement of sincere and profound thought. When reading Hartmann one cannot help doubting the author's serious conviction of the truth of his writings. It would be difficult to imagine anybody ever gaining such an impression from Soloviev's works. One may agree or disagree with him, but hardly anyone would venture to deny to his philosophy immense depth of feeling, inner unity that is full of poetic sentiment, and particularly, intimate and genuine sincerity.

I am quite conscious of the fact that many diverse judgments of Soloviev's philosophy will be passed by the critics —all according to the way they themselves see things. There will be many who will say that Soloviev's standpoint is too reactionary, and that the basis of his intellectual outlook has been utterly condemned by history. It seems to me, however, that even these critics will not dispute Soloviev's indubitable services to the history of philosophic thought. Let it be admitted for the moment that the school of thought to which he adhered in his philosophic activity has essentially been outgrown and left behind. The fact that it still has many followers and exercises great practical influence still remains. Whatever this method of thought may be, we must judge its representatives by the power of their genius, by their originality and depth, by the consistency and coherency of their opinions. Truth evolves gradually from collision of the most contradictory opinions and suppositions. For this reason, the more fully and completely even a one-sided view of things is expressed, the better it is for their true understanding: every fallacy, to be completely defeated, must speak itself out to its last word.

It may be asked, however, whether it is true that the spiritual conception of the world which was preached and defended by Soloviev has been entirely condemned by history; and whether it is true that the standpoint of empirical realism based mainly on raising the particular and conditional truths of physics to the position of absolute axioms, has for ever superseded the old spiritual view of life. To say that this is true would of course be giving a premature and hardly historically sound answer. Indeed, the system of thought for which Soloviev fought has survived many a thousand years, whilst the system of new ideas which has broken away from the old system in the form under which we know it now, can hardly boast of even a hundred years of existence. Is not this time too short for testing and measuring its historical durability? Again, is it suggested that Soloviev stood up

for his ideas of the absolute spirit as the foundation of all being, and of the spiritual essence of all things, simply because of his *naïveté* and his ignorance of the objections that could be raised against him? Surely this can scarcely be maintained by anybody. Soloviev lived through materialism and positivism with such a depth of feeling, with such enthusiasm and sincere devotion, that but for the change in his mental outlook mentioned in the beginning of this paper he would, no doubt, have become one of the most brilliant and most profound apostles of the new philosophical movement. Can the change then have been merely a strange caprice of his mind? Did he close his eyes to truth clear as the sunlight, and abandon himself to manifest falsehood? A fair-minded reader of his works will agree that it was not so. Soloviev was relentlessly strong and equally clear in his critiques. Perhaps no more striking and persuasive pages could be found in his philosophic works than those in which he subjects to criticism the materialist and positivist theories. A careful student of these pages will see that Soloviev had quite firm and reasonable grounds for maintaining that materialism is actually only a medley infringing all the laws of logic, which piles in one heap untenable speculative suppositions and empirical generalisations forced beyond their proper limitations, whilst, on the other hand, pure empiricism taken as it is and followed to its final conclusions, leads to nothing but a complete denial of all knowledge, A careful reader of Soloviev's works will also see that no bans can be imposed on human thought forbidding it to ponder over what it finds of interest to itself. He will then clearly understand that the path chosen by Soloviev was the only one open to him.

It may easily be admitted that the system of Soloviev in some of its particular points contained much that reflected only subjective views, beliefs and hypotheses. It may even be admitted that this system was never worked out in all its details. This, however, does not minimise the immortal service which Soloviev rendered to humanity by pointing out with all possible clearness the only escape from the depressing contradictions of the philosophical movements of his time. Let it be granted that his system as a whole did not give the final solutions of the questions of life and knowledge —is there anyone capable of creating such a system?—but he indicated the direction in which the positive truth should be sought, and gave high and inspiring examples of the self-denying quest for its attainment. In an epoch of lassitude and of spiritless self-distrust through which philosophical thought was passing, Soloviev fearlessly raised the standard

of independent philosophy and unswervingly held it flying to the last days of his life. In the epoch when the mind of the greater majority of educated people, harassed by the contradictions in life and thought, helplessly rushed after every will-of-the-wisp, incessantly embracing new ideals as soon as the old ones ceased to satisfy it, Soloviev alone with the unbridled energy of his vigorous mind called all and sundry to the *true* light. Alas, that so few should have answered his call!

II.—KANT'S PHENOMENALISM IN ITS RELATION TO SUBSEQUENT METAPHYSICS.

By Archibald A. Bowman.

In a previous article we examined Kant's denial of metaphysics, with a view to determining whether this must be taken as definitive, or may be regarded as admitting, under certain qualifications, a body of positive doctrine on ultimate questions. Considered in itself Kant's statement is sufficiently categorical. Metaphysics is impossible. But as soon as we try to relate the views of subsequent thinkers to the position thus formulated, a curious anomaly makes its appearance. Generally speaking post-Kantian thought, largely unsympathetic in its attitude to metaphysics, could hardly be said to dismiss the matter with such a direct and unqualified negation as that of Kant. From this point of view therefore it might seem as if the tendency since Kant's day had been on the whole in the direction of a tolerant reconsideration of the question. This however represents only one aspect of the case. It is no less true that from the average modern standpoint the Critical Philosophy, so far from seeming to negate metaphysics, is apt to appear as itself extravagantly metaphysical.

The reason for this is that while Kant excluded the unconditional from the content of the knowable, as defined in the *Critique of Pure Reason*, he did so by a method which implied, not the negation, but the emphatic assertion, of the *unconditionally valid*. The extent to which Kant's use of *a priori* principles has given his thinking the air of fateful dogmatism is evident enough if we view his ethical absolutism in the light of subsequent naturalism. To Nietzsche, for example, it seemed that Kant, like all European philosophers since Plato, was overruled in his search for truth by a fanatical regard for "majestic moral structures". The unassailability of the moral order is a dogma which he maintains in defiance of the evidence. "For," says Nietzsche," as regards nature and history, and the utter immorality of nature and history, Kant was a pessimist, as every true German of old;

he believed in morals, not because they are verified by nature and history, but in spite of their being constantly contradicted by nature and history." [1]

The substance of Nietzsche's complaint is that Kant subordinates the rational interpretation of experience and history to ethical prejudice. In attempting to render morality "unassailable," by rendering it "unintelligible" to reason, he has contributed in his own way to the "general animosity of the Germans against enlightenment".[2] But it is by no means only in this direction that Kant has seemed to go wrong. On the contrary, to writers of another temper the defect of his thinking is just the opposite—*viz.* its extravagant intellectualism, infecting his ethics, through his epistemology, with a pseudo-scientific exactitude and simplification. His failure to do justice to the original and infinitely complex *de facto* character of the moral life is due not to a moral but to a logical fanaticism. This view, which is maintained by the French sociological school of moralists,[3] particularly by M. Belot, has been stated with remarkable persuasiveness by Prof. Georg Simmel in his *Vorlesungen über Kant;* and nothing could better serve our present purpose of determining the ultimate purport of Kant's total thought in relation to metaphysics, than an analysis of Simmel's argument.

In his Berlin lectures, published in 1904, Prof. Simmel offers a presentation opposed to that which accords what he considers a spurious primacy to the ethical interest.

This latter view is based on the assumption that Kant handles morality from within, *i.e.* from the standpoint of the moral agent, beset on the one hand by the natural desires and on the other by the dictates of the Categorical Imperative, and concerned only with the practical solution to what is essentially a practical problem. The centre of Kant's ethical teaching is found in the actuality of the moral conflict, in relation to which his formal rigorism appears under the aspect of asceticism.

The seriousness of this assumption may be measured by the consequences which it entails, and particularly by the readiness sometimes shown to take for granted that Kant is answered by the ordinary refutation of ascetic theory. To this tendency Prof. Simmel furnishes a valuable counterpoise in the skilful reorientation by which he places the centre of

[1] Morgenröte, Einleitung, tr. Johanna Volz. [2] *Ibid.*, pp. 191-192.

[3] For an excellent critical account of their views on this point among others *vide* J. Lottin: *Le Problème des Fins en Morale* in the Annales de l'Institut supérieur de Philosophie of the University of Louvain, 1914. Especially pp. 316-317.

Kant's ethical teaching, as of his teaching in general, not in the moral interest as such but in the intellectual. "The uncompromising rigour of Kant's ethics," he writes, "has its origin in his logical fanaticism, which would force upon life as a whole the form of mathematical exactitude"; and he goes on to attribute "this intolerance of the ethical imperative" to "a spiritual propensity directed not towards the practical but towards the logically comprehensible".[1]

In its most general character this representation is of course one which has been widely accepted in Germany and elsewhere. What is peculiar to Simmel's account is the fatal nature of the effects which, following certain well-known tendencies in contemporary thinking, he attributes to the intellectualistic attitude of Kant.

These effects, as they appear to Simmel, may be summed up in one or two broad features. In the first place "the boasted primacy of the practical reason" must go.[2] The centre of Kant's system being shifted from morality as such, the latter retains only that amount of interest which its connexion with scientific method allows it.

This according to Simmel results in an unexampled ethical rigorism. "The greatest moralists," he says, "who found the springs of their teaching in the exclusive estimation of the ethical, were not for an instant to be compared to Kant in point of rigour—neither Buddha nor Jesus, neither Marcus Aurelius nor St. Francis."

The comparison is not a happy one; and it suggests that the writer is himself confusing the scientific rigorism of Kant with something intrinsically different—no less, in fact, than the view attributed to him by those who are charged with placing the centre of his system in the immediacy of the moral interest. An excess of rigour in the application of scientific or logical principles to the ethical aspect of life is not obviously or necessarily the same thing as a rigoristic content in the system of ethics involved. And the converse is strictly true. It would be difficult to find an extremer rigorism than in the moral and religious teaching of Tolstoy; yet this coincides with a view which negates the very idea of science.

At a later point Simmel states his position unambiguously. He shows that for Kant there is no necessary intrinsic opposition between pleasure and the morally good. The prominence given to the conflict with pleasure is of purely theoretical significance. Its value lies in the fact that this

[1] *Vorlesungen über Kant*, p. 6. [2] *Ibid.*, p. 28. *Cf.* p. 130.

situation more than any other furnishes the conditions which render the specifically moral attitude clearly definable to the intellect. Ascetic morality on account of its passivity is alien to Kant's point of view.[1]

A further matter which calls for attention is the alleged undue simplification of the ethical problem. "It is in complete agreement with this," Simmel continues, "that Kant . . . takes his problem only from the most everyday and, so to speak, grossest eventualities of the moral life. That which in the facts of morality is accessible to the most general concepts he treats with unprecedented greatness and acuteness. But all the deeper and finer questions of ethics, the points where conflicts culminate, the complications of feeling, the dark powers in us, with which we so often stand face to face in moral perplexity—of all that he appears ignorant—he who in the observation of man's *intellectual* activity penetrated to the deepest, finest and nicest functions. The want of imagination and the naïveté (Primitivität) in his mode of stating the ethical problem, and the refinement and comprehensiveness in his mode of stating the theoretical, prove that for him the amenability to logical thinking was the sole factor which determined what should enter into his philosophical thought."[2]

There follows a consequence which, unless it is stated with certain very exact modifications, will certainly prove fatal to Kant's account of the moral life—*viz.* that our conduct derives its ethical value from its conformity to the law of non-contradiction.[3] This may of course be in some sense allowed (certain presuppositions being first of all secured). But the point of Simmel's statement is that the intellectual implications of Kant's ethics are of such a nature as to substitute logical for moral values and thus to annul the independence and specific character which distinguish morality.

Weight is given to his contention by the type of examples employed by Kant. The "Primitivität" of a morality based abstractly on theory comes out particularly in this, that the absence of contradiction, in which the essence of morality is found to consist, can be expressed only in a partial, *viz.* a *prohibitive* sense. 'All the examples which Kant gives follow the formula: "Thou shalt not——"; but for the selection of the ethically necessary from the ethically possible, as thus determined, this principle affords not the slightest direction.'[4]

[1] *Vorlesungen über Kant*, p. 111.
[2] *Ibid.*, p. 6. *Cf.* p. 105.
[3] *Ibid.*, pp. 98-99, 101.
[4] *Ibid.*, p. 101.

The exact nature of the defect here indicated is made clear in the pages which follow. A contradiction has meaning only when the reality of a conception is given beforehand. Where we are dealing with mere possibilities the case is different. The law of non-contradiction therefore presupposes a given reality and can be used as a criterion on this assumption alone. Here "the criterion holds good only if the ethically necessary already stands fast on other grounds".[1] Simmel concludes that instead of independently establishing morality, Kant's formula appears as a mere means for the clearing up and arranging of moral values already recognised from a different source—through ethical instinct or otherwise.

The general extension of the ethical criterion, thus narrowly based upon its logical character, to the universe of values involves not too narrow a conception of morality but too wide an application of this conception.[2] The value of personality or of a good soul is not necessarily determined by ethical considerations. In estimating the relation of pleasure to value Kant's method involves a *ὕστερον πρότερον*. Exactly that which from the standpoint of the value of the soul Kant regards as entirely indifferent, that, *viz.*, in which it finds its pleasure, is the point on which everything should be made to turn. And Simmel expresses his objection to the Kantian ethics as based not on the rigour of the moral concept (this cannot be too strictly defined), but on the illegitimate translation into ethical terms of values fundamentally different. In a word, Kant requires of moral action that it shall not only be directed to moral ends in conformity with moral rules but shall find in the form of morality itself the sole content and object of the moral life. Accordingly: "nicht das pflichtmässige Handeln, sondern allein das Handeln aus Pflicht genügt dem sittlichen Anspruch".[3]

This defect, due to Kant's intellectualist point of view, culminates in his logical derivation of the fundamentals of religion from ethical implications, resulting in the failure to recognise religion as "a structure by itself, a growth out of its own root".[4] The derivative position thus accorded to religion results in a fatal disturbance of elements within the content of the religious life itself. Its specific character, what is most peculiar and deepest in it, is lost. Thus duty has to be conceived as terminating in a blessedness infinitely

[1] *Vorlesungen über Kant*, p. 102.
[2] *Ibid.*, p. 112. [3] *Ibid.*, p. 87.
[4] "Ein einheitliches Gebilde . . . einen Trieb aus eigner Wurzel," p. 130.

remote—the latter being brought in only as a supplement and never as a motive; whereas it is the unique character of religion, rightly understood, to reverse this order, and to substitute for a duty which should logically end in blessedness "an ideal power which makes the attainment of blessedness the duty of man".[1]

Thus Kant sacrifices religion and all that is intrinsic in it to "Moralism"; and the immortality of the soul is reduced in the proof to a mere formal condition, devoid of any specific meaning, and signifying little more than the bare infinitude of time. "It is really only the expression of the truth that an infinite demand may be laid on a finite being."[2]

To sum up, Simmel's indictment of Kant's ethical teaching amounts to the charge that Kant, in his endeavour to explain morality on strict rational principles, has lost all touch with the unique and infinitely complex character of the thing itself. As has been remarked, it is a case of scientific simplification where simplification means falsification. Kant has proved unfaithful to the facts of experience in the moral life. Thus in spite of a superficial appearance of diametrical opposition, we detect a substratum of agreement in the criticisms of Simmel and Nietzsche. To both Kant seems to err through a disregard of what is actually given—in the one case to the prejudice of morality, in the other to its illegitimate exaltation over the plain facts of nature and history. Such a procedure involves the promotion of speculative ideas over actualities, in the sense that the validity of the former is conceived to be entirely independent of the latter; and this is just the feature in virtue of which Kant's thinking, despite the doctrinal negation of metaphysics, appears to the modern mind as metaphysical in the wrong sense of the term.

The change here discernible implies a new estimation of experience which, while rejecting ultra-experiential and unconditional values, tends to invest experience itself with something of the positive and ultimate character of metaphysical reality. Already in Schopenhauer we find an advance in this direction. In continuing to regard metaphysics as based upon principles that cannot be deduced from experience, Kant, it is argued, merely accepts the presuppositions of his dogmatic predecessors. Reinterpreting these in terms of the conditions of human knowledge, he concludes that metaphysics is impossible. In contradistinction to this Schopenhauer maintains that a solution to the problem of

[1] "Ein inheitliches Gebilde . . . einen Trieb aus eigner Wurzel," p. 131.
[2] *Ibid.* p. 133.

existence must come from an understanding of the world itself. At the same time he admits that any such solution, based upon experience, can be only partial; and he ends by defining his position as midway between the "Allwissenheitslehre" of earlier dogmatism and the despair of the Kantian Criticism.[1]

One very obvious characteristic of the new standpoint is a general relaxation in the absolutism with which principles of every sort are applied. The naturalism of Schopenhauer, with its continual profession of adherence to the laws of positive science, is less rigorously positive in its conception than the theory of Kant, which would grant only conditional validity to these laws. This will appear if we consider how Kant's phenomenalism fares in the hands of Schopenhauer. The unique character of this phenomenalism is the way in which it enables Kant to impart to knowledge, which is an individual, subjective function, the significance of the universal and objective. Kant's theory of objectivity, we may say, is the kernel of his phenomenalism, and is what distinguishes the latter from other theories bearing a superficial resemblance to it — the phenomenalism, for example, of Herbert Spencer. It is this that enables Kant to develop an epistemology which, within the limits of the phenomenal, yields a knowledge as universal as its own principles. Between such a phenomenalism, essentially objective, and the subjectivism which was chiefly what Schopenhauer saw in it, there is all the difference that divides a theory of knowledge based on the idea of *validity* and genuinely *epistemological* principles from a mechanical psychologism like that of Locke.[2] Schopenhauer is himself saved from such a position by reverting to a rationalistic postulate in the form of the principle of sufficient reason, which, as the law of causality, he contrives to apply in a naturalistic fashion—the whole

[1] *Kritik der Kantischen Philosophie: Die Welt als Wille und Vorstellung*, vol. i., pp. 505-507 (Frauenstädt's edition).

[2] Schopenhauer's understanding of the matter is well indicated by his habit of placing Locke and Kant together as exponents of the subjective theory of knowledge—the difference between the two being a greater centrality in Kant's view. For Locke knowledge is a function of the senses, for Kant a function of the brain. *Welt als Wille*, etc., vol. i., pp. 494-495; vol. ii., pp. 13-14; 23; 47-48; 216-217; 324; 356; 668. *Vide* especially p. 307: "Die eine (Betrachtungsweise) ist die subjektive, welche, von *innen* ausgehend und das *Bewusstseyn* als das Gegebene nehmend, uns darlegt, durch welchen Mechanismus in demselben die Welt sich darstellt, und wie aus den Materialen, welche Sinne und Verstand liefern, sie sich darin aufbaut. Als den Urheber dieser Betrachtungsweise haben wir *Locke* anzusehen: *Kant* brachte sie zu ungleich höherer Vollendung," etc.

being subordinated to a subjectivist interpretation.[1] In place of an objectivity conceived as the element of universal significance in the content *known*, we have a world of objects *intuited as caused;* and it is this feature (which is merely a onesided, *i.e. objective* way of expressing the general principle that subject and object are relative) that constitutes their objective character.[2]

Page by page in Schopenhauer's criticism of Kant we can trace the naïve judgment which, under the impression that it is removing excrescences and introducing improvements, succeeds only in missing the point of the whole matter. Thus, dealing with "the object of the categories" ("der Gegenstand der Kategorien"), which is to be distinguished as the "Objekt an sich" from the "Ding an sich," Schopenhauer remarks a three-fold division in Kant: 1, the "Vorstellung"; 2, the "object" (Gegenstand) of the "Vorstellung"; and 3, the thing in itself. The first is the object given in sense ("Sache der Sinnlichkeit"), and includes not only sensation but the forms of intuition, space and time. The second is the object of the understanding, and is added by thought through the twelve categories. The third class lies beyond all knowability. Thereupon Schopenhauer proceeds to demolish the difference between 1 and 2, adducing Berkeley's proof, as well as Kant's own "completely idealistic standpoint in the first edition" of the *Critique of Pure Reason.* But now if 2 cannot be absorbed in 1, it must be annexed to the thing in itself—which of the two courses we adopt depending, according to Schopenhauer, in the end, on what we understand by object. The important point is that the interloper be got rid of, and that nothing be left in the field but "Vorstellung" and "Ding an sich".[3]

While Schopenhauer may be justified in his criticism of the "Objekt an sich" as an anomaly in Kant's later position, and while, as is implied, it is a matter of indifference in which of the two possible ways the "Objekt" is disposed of, it does not by any means follow that once we have got rid of it, we are left with a pair of simple and intelligible alternatives such

[1] *Kritik der Kantischen Philosophie*, p. 530. *Cf.* Schopenhauer's denial of the Kantian distinction between subjective and objective succession, *Vierfache Wurzel*, p. 86. 'Both are "Begebenheiten," the knowledge of which is objective, *i.e.* a knowledge of changes in real objects, which are known as such by the subject. Both are changes in the relative position of two bodies.'

[2] *Kritik der Kantischen Philosophie*, pp. 519-521; 525 ("unsere empirische Anschauung ist sofort objektiv; eben weil sie vom Kausalnexus ausgeht"); 527-530.

[3] *Ibid.*, p. 526. *Cf. Vierfache Wurzel*, p. 27.

as Schopenhauer supposes. As a matter of fact it is hardly possible to derive from Schopenhauer's account any quite clear and consistent idea either of the alternatives themselves or of their interrelation. His desperate attempts to formulate the thing in itself as the inexplicable will which somehow *has* appearances, although it does not *itself* appear,[1] gave rise to confusions which from the beginning laid him open to the charge of contradiction.[2] The "Vorstellung" is equally obscure. In so far as it is to be identified with the Kantian phenomenon (and this is certainly Schopenhauer's meaning), nothing could be more inappropriate than the attempt to explain it by reference to Berkeley's proof that no difference exists between the "Vorstellung" and its object. This would be to reduce it to what Berkeley understood by "idea"—*i.e.* to sensation. But Schopenhauer expressly distinguishes sensation from "Vorstellung,"[3] the former merely furnishing material to the understanding for the creation of the latter through its single "form," causality. The objectivity of the "Vorstellung," thus distinguished from sensation, becomes in the end something highly enigmatic. When Schopenhauer remarks that it depends on the sense in which the word "Objekt" is understood whether the Kantian "Objekt an sich" shall be annexed to the "Vorstellung" or to the thing in itself, he is really uncovering an ambiguity which plays havoc with his own conception. At one time he defines the objectively real in terms of the "Vorstellung" and its implications;[4] at another nothing short of the thing in itself will meet the demand for such reality. The result is something not far short of a rupture through the whole fabric of his

[1] Here is an example: "Denn es ist eben das Ding an sich, welches, indem es erscheint, jene Phänomene darstellt, von ihnen selbst gänzlich verschieden, zwar in seiner Erscheinung dem Satz vom Grund, als der Form der Vorstellung, völlig unterworfen, selbst aber nie auf diese Form zurückzuführen, und daher nicht ätiologisch bis auf das Letzte zu erklären, nicht jemals vollständig zu ergründen; zwar völlig begreiflich, sofern es jene Form angenommen hat, d. h. sofern es Erscheinung ist; seinem innern Wesen nach aber durch jene Begreiflichkeit nicht im Mindesten erklärt." *Die Welt als Wille*, etc., vol. i., p. 145.

[2] *Vide, e.g.* Herbart's review of the *World as Will and Idea*, reprinted in his *Works*. Some of the criticisms are based on a superficial literalism in the interpretation of passages.

[3] *Vierfache Wurzel*, pp. 52-59; 67.

[4] Ich bemerke bei Gelegenheit der Haupterörterung dieses Paragraphen, dass, wenn ich, im Fortgange der Abhandlung, mich, der Kürze und leichtern Fasslichkeit halber, des Ausdrucks *reale Objekte* bedienen werde, darunter nichts Anderes zu verstehen ist, als eben die anschaulichen, zum Komplex der an sich selbst stets ideal bleibenden empirischen Realität verknüpften Vorstellungen. Anmerk. to p. 33 *Vierfache Wurzel*.

thinking. For we are faced with the two-fold view according to which on the one hand the objective appears as the element in consciousness which renders our sensations explicable by giving us their causal references along with them, and on the other we reach the objectively real only where the causally explicable, *i.e.* the superficial world of appearance, yields to the inexplicable reality of the will. Thus the Kantian conception of the objective as the universal character of experience, a conception which brings experience and science together by interpreting the former as scientifically explicable and the latter as an exposition of the principles which render experience possible, is superseded by the paradox that the objectively real and the explicable vary inversely—a view which suggests that in the end the character of reality is to be found (if anywhere in the world of the knowable), where knowability in any scientific sense is at its minimum—*viz.* in the inexplicable data of personal experience.[1]

To sum up these considerations in so far as they have a bearing upon the question of metaphysics and knowability, we must recognise that Schopenhauer begins by limiting Kant's extreme demand for absoluteness in the subject-matter of metaphysics. In this way he contrives to restore the metaphysical to knowability, but only by a reinterpretation which detracts from the objective character of knowledge as formulated by Kant, and leads to hopeless ambiguity.

Schopenhauer indicates his point of departure from Kant by ascribing to the thing in itself such knowability as is implied in its identification with the will.[2] This enables him

[1] *Vide* a very significant passage immediately following one already quoted: "Daher, je mehr Nothwendigkeit eine Erkenntniss mit sich führt, je mehr in ihr von Dem ist, was sich gar nicht anders denken und vorstellen lässt—wie z. B. die räumlichen Verhältnisse—je klärer und genügender sie daher ist; desto weniger rein objektiven Gehalt hat sie, oder desto weniger eigentliche Realität ist in ihr gegeben: und umgekehrt, je Mehreres in ihr als rein zufällig aufgefasst werden muss, je mehreres sich uns als bloss empirisch gegeben aufdringt; desto mehr eigentlich Objektives und wahrhaft Reales ist in solcher Erkenntniss; aber auch zugleich desto mehr Unerklärliches, d. h. aus Anderm nicht weiter Ableitbares". *Die Welt als Wille*, etc., vol. i., p. 145. Knowledge of the will is mentioned as a posteriori, *ibid.*, vol. ii., p. 219. In p. 268 Schopenhauer gives a catalogue of things that are "Sache des Willens," *viz.* "Wunsch, Leidenschaft, Freude, Schmerz, Güte, Bosheit, auch was man unter 'Gemüth' zu verstehen pflegt, und was Homer durch φιλον ἦτορ ausdrückt".

[2] By distinguishing a knowledge of the will in self-consciousness from a knowledge of the "Vorstellung" through the intellect (*vide Die Welt als Wille*, etc., vol. ii., pp. 294; 304; 306-307; 419 *sq.*, 513; 738) Schopenhauer has anticipated the line of cleavage in recent metaphysical thinking; and a study of the words in which he attempts to formulate the distinction is of some importance on this account.

to detect metaphysical reality, as we have just seen, in the immediacy of personal experience; and recent thought in some of its phases, even in phases profoundly opposed to Schopenhauer's line of development, has gone so far as to maintain that God (the reality *par excellence* of the traditional metaphysic) is present with a certain *literalness* in experience even at the level of sensation,[1] that experience is itself metaphysical,[2] and that the real in the form of other minds than our own is directly, and not merely inferentially, knowable.[3]

It is obvious that the position of metaphysics as a distinct discipline is as much threatened by this tendency to seek the metaphysically real in the actuality of experience as it is by the denial of knowability to the thing in itself. If metaphysics is to be preserved, therefore, the presence of the metaphysical in experience must be defined in a way that will leave some aspect of reality unexhausted by experience as such. The problem of post-Kantian metaphysics has come to be that of finding a sphere which philosophy, while maintaining the necessary relations with the sciences and experience, may yet occupy in its own right and without ceding its substance and its method to either. What the situation demands is a certain closeness of relation, short of identity, between philosophy and the conscious life of man as a whole.

Such an adjustment (or at least the possibility of such) is suggested by Herbart when he says that in its relation to

[1] W. E. Hocking: *The Meaning of God in Human Experience*, p. 302. The passage referred to is sufficiently remarkable to warrant quotation: "It is not customary, I know, to seek for God at the level of sensation: that is one reason why it has seemed to me important to have found Him there. Sensation may supply, as it were, a missing dimension to our thought of God. God must now be to us not less real and present than Nature, not less definitively here and now than these impressive objective Facts." Even Hegel, with his respect for the "things of this world," with his strong insistence upon the *positive* in religion, as in politics and jurisprudence, falls far short of this demand for *literalness*. For him God is still, always and specifically, what can never be apprehended by the senses. *Encyklopädie*, §§ 12; 19, Zusatz 2; 21 Zusatz and *passim*.

[2] Hocking, *op. cit.*, p. 303.

[3] *I.e.* at least as directly as anything else that pretends to actual existence. *Vide* G. P. Adams: "The Mind's Knowledge of Reality," in *The Journal of Philosophy, Psychology and Scientific Methods*, Feb. 4, 1915. Hocking, *op. cit.*, Part IV., ch. xvii. Mr. Hocking draws attention to a passage in Münsterberg's *Grundzüge der Psychologie* (pp. 44-55). Münsterberg's remarks on the direct sense of reality in the spatially and temporally distant (p. 48) are worth comparison with Mr. Adams's views on the solidarity of past and present time in our appreciation of the known real.

the rest of knowledge philosophy is altogether immanent[1]—an expression which, if taken in a sufficiently wide sense, undoubtedly indicates the prevalent attitude of the two main schools of thought that have stood for a perfectly distinctive, positive metaphysic in modern times—Realism and Idealism.[2] If so, it should be possible to characterise these divergent theories in terms of the interpretation which they respectively place upon the immanence of philosophy in human knowledge. From this point of view all differences can be reduced to two fundamental oppositions. On the one hand philosophy may be conceived as immanent in knowledge in the sense that when developed to the fulness of its inherent possibilities this same knowledge will be found to furnish the actual content or determinate character of that substantive reality which is the subject-matter of philosophy. On the other hand the immanence of philosophy may be understood to mean that an analysis of all that is known will reveal the presence of certain irreducible differences in the *knowable* (to be dealt with only by such speculative methods as logic has at its disposal), in virtue of which some *knowables* stand out as *reals* or the ultimate substantival terms of existence, while the remainder appear as *real relations* or other real but non-substantival predicaments of the former. These two points of view are represented, in the two most positive and most distinctively antithetical metaphysical theories of modern times, by Hegel and Herbart.

The Idealism of Hegel is distinguished by a highly articulated and extremely definitive logic, and this logic, which must be understood as an objective body of truth,[3] is presented as an abstract formulation of the actual content or adjectival articulation of a reality designated the Absolute or God. All the logical categories from Being on are stated as *definitions* of this substantival reality.[4] The importance of this proposition can hardly be overestimated. The Hegelian metaphysics, taken for what it professes to be, stands or

[1] *Ueber Philosophisches Studium*, Werke II., p. 230 (Kehrbach's edition as throughout). That Herbart means knowledge in the form both of experience and of science appears from a passage in the *Lehrbuch zur Einleitung in die Philosophie*, W. IV., p. 30.

[2] Herbart is at one with Hegel in insisting that it is only in its *manner* that philosophy differs from other forms of knowledge. "Die Philosophie besitzt nicht, gleich andern Wissenschaften, einen besondern Gegenstand, mit dem *sie* sich ausschliesslich beschäftigte: ihre Eigentümlichkeit muss also in der Art und Weise gesucht werden, wie sie jeden sich darbietenden Gegenstand behandelt." *Lehrbuch*, etc., pp. 29-30.

[3] Hegel characterises the traditional logic, in contradistinction to his own, as subjective.

[4] *Encyklopädie*, § 85.

falls by its ability to give an intelligible meaning to the statement that the Absolute is *defined*.

That difficulties would arise over this question Hegel perceived in stating the principle, and he hastened to add that the form of *definition* was superfluous, since the subject stood for the indeterminate substratum, the *thought* or matter involved (der Gedanke, die Sache) being contained entirely in the predicate. This explanation must be taken as a decisive factor in the estimation of Hegelian Idealism. Reality or the Absolute is something of which the whole significance lies in the evolving content or definition. From this we must conclude that if the substantive reality is to have any meaning *as absolute*, the absoluteness in question must be the absoluteness of its content. In other words the content of the Hegelian logic (not, of course, in any one or more of its individual phases, but in its completeness) is to be taken as the absolute and definitive body of philosophy. This view is abundantly borne out by Hegel's procedure. The progressive definition of the Absolute is given with the utmost exactitude in the dialectical evolution of the categories, the starting-point being determined with precision,[1] and the first and third member of each triad taken as expressing in order some moment in the positive content of the real.[2] Thus the *application*, in contra-distinction to the *character*, of the logical content loses all importance, if not, indeed, all meaning, for philosophy—there being, strictly, no legitimate *philosophical* question except as to the nature of the content as such.[3] For this reason there is soundness of judgment, at least as to where we should look for Hegel's own meaning, in Mr. McTaggart's contention "that the really valid part of Hegel's system is his Logic, and not his applications of it".[4]

It is no part of our present purpose to comment upon the Hegelian dialectic; but a few remarks will be necessary on the Idealistic interpretation of metaphysics as determined by

[1] *Being* indicates the point where *thought* (der Gedanke), historically as well as logically, first makes its appearance. *Encyklopädie*, § 86, Zusatz 1, 2.

[2] *Ibid.*, § 85.

[3] *Vide, e.g.*, Hegel's criticism of Kant on the ground of his subjectivity —the charge being that Kant does not consider the categories *in themselves* ("an und für sich"), but only from the standpoint of the question whether they are subjective or objective. *Encyklopädie*, § 41, Zusatz 2; § 42, Zusatz 3, on the importance of the question of Being. "Bloss dadurch indess, dass ihnen das Seyn zukäme, gewönnen weder die Gegenstände noch wir etwas. Es kömmt auf den *Inhalt* an, darauf ob dieser ein *wahrer* ist." *Cf.* § 46.

[4] *Studies in the Hegelian Dialectic*, p. 238.

the principle so emphatically promulgated by Hegel, that the question for philosophy is the question of content. This principle, as we have just seen, by transferring all meaning from the Absolute as the subject of definition to the definition of the Absolute in the total content of the Hegelian logic, issues in a view which requires us to attribute absoluteness, and therefore finality, to the content of the system itself. As a matter of fact, historically speaking, the Idealistic movement since Hegel has not advanced at all along specifically Hegelian lines. What progress has occurred (if indeed it can be called progress) has been in the nature either of a critical departure from Hegel or else of an attempt to apply his principles in special fields, such as ethics, æsthetics and politics—a somewhat minor service if it is really to logic rather than to its applications (whether by Hegel or by others) that we must look for the true significance of Absolute Idealism. Hegel's philosophy therefore marks the limit of achievement in this interpretation of metaphysics, and for this reason has proved a speculative *cul de sac.*

No better evidence could be adduced than the anomalies which appear in English Idealism, as this has fallen more and more definitely under the influence of the Hegelian standpoint. Already in Green we have the distinctive Idealistic principle, the ideality of the finite,[1] conceived, however, in a peculiar way, in terms, *viz.*, of constitutive relations. It is only through these that the Infinite or timeless principle can acquire meaning ; and English Idealism has in general given a central *rôle* to relations as internal and constitutive as the ideal content of a real Absolute. The significant feature is that no attempt is made to develop a complete and systematic theory of relations. The thoroughly otiose character of the latter comes out clearly in the transition from Green, for whom relations are, theoretically, the very essence and tissue of the world, to Bradley, for whom they are not even thinkable. The truth is that English Hegelianism, in spite of its professions, has never been able to make anything of relations ; but on the other hand it has never really had any need of them. Strictly speaking, it is with the *idea of relatedness* rather than with relations as such that it has to do, and the strange thing in Mr. Bradley's attitude is not that he should have found that idea contradictory, but that he should have thought the fact in any way

[1] "Diese Idealität des Endlichen ist der Hauptsatz der Philosophie, und jede wahrhafte Philosophie ist deswegen *Idealismus.*" *Encyklopädie*, § 95.

remarkable.[1] Mr. Bradley's sensitiveness to the contradictory element in the ideal qualification of reality is essentially opposed both to the spirit and to the letter of a genuine, *i.e.*, a courageous Idealism. It is alien in temper to Hegel's robust acceptance of the contradictory as the very *nature* of the world of finite things, and brings the English view immediately under the fire of just such criticism as that which Hegel directed against Kant, when he complained that the whole phenomenalistic position, with its antithesis of appearances and things in themselves (once more an antithesis to which Hegel was thoroughly opposed) was due to an excessive tenderness for the things of this world.[2]

The remark occurs in a passage in which Hegel criticises Kant's handling of the antinomies, and it shows a just appreciation of the part played by the contradictions inherent in experience in leading Kant to formulate the distinction of phenomenon and noumenon. It is difficult to evade the conclusion that in its ultimate significance Mr. Bradley's method of taking refuge in the Absolute against the contradictions of the finite—a completely non-Hegelian procedure—is really an unconscious return to Kant's phenomenalism in its least satisfactory aspect (an aspect in which it does not at all represent Kant's best critical thinking),[3] and that the Bradleian Absolute is just the Kantian Noumenon in its most otiose and negative form.

To sum up the situation so far as Idealism is concerned, we may say that the view of metaphysics which postulates an Absolute, and for the rest proceeds to unfold a content which shall be the definition of this, cannot stop short of demanding absoluteness for the definitory content itself. Hegel was the last Idealistic thinker adequately to realise this truth, and since Hegel there has been no genuine Idealism. There has been no Idealism because there has been no willingness either to accept the systematised content of Hegelianism as final or to elaborate an equally precise and exhaustive system as the definitory content of the Absolute. By this is not meant that the quasi-Hegelians of recent times are altogether wrong in emphasising the application of general Hegelian principles (such, *e.g.*, as the ideality of the finite or the de-

[1] It is obvious that every *determinate* or finite relation must, on Idealistic principles, involve a contradiction, for the same reason that every determinate proposition is, according to Hegel, *ex hypothesi*, false. *Encyklopädie*, § 31. *Cf.* § 82, Zusatz: "Ein spekulativer Inhalt kann deshalb auch nicht in einem Satz ausgesprochen werden".

[2] *Encyklopädie*, § 48.

[3] The point will be touched upon later.

finition of truth in terms of the Whole) to specific problems, rather than the literal content and order of the Hegelian logic. It may well be that the elements of permanent value in this stupendous structure of thought are really incidental and in the end more or less independent of Hegel's method;[1] but in this case Hegel loses the ground on which his claims to be considered a scientific philosopher are staked; and the category which suits him best is that of mystic—in a sense fundamentally opposed to that in which he accepted and welcomed the designation. His *system*, while still perhaps meriting the adjectival qualification of metaphysical, ceases to be in any fundamental respect different from those doctrines which he has branded, as something less than genuinely speculative, with the designation, "metaphysic of the past".

To turn now to the second of the two senses in which the *immanence* of philosophy may be understood, Herbart has left us in no uncertainty as to his own interpretation. "Metaphysics has no other definitory function (Bestimmung) than that of rendering thinkable the same ideas which experience forces upon it."[2] The implication is that as they occur in actual experience the ideas referred to are contradictory;[3] and this according to Herbart is the case. The condition of speculation in the philosophical sense is stated in the words: "If speculation is to be possible, a pure manifold must be, in the first place, *given* or *presupposed for the purposes of philosophical investigation*, but, in the second place, it must in some way be given together. In this Together (Zusammen) there must be inherent contradictions. These contradictions speculation will assail and resolve. Wherever they occur, speculation finds its work to do. . . .

"In the circle of experience there occurs a complex combination of the manifold, appearing in the form of simple sensations."[4]

From another point of view the immanence of philosophy depends upon the fact that being or reality is implied in the mere fact of appearance. Seeming, *qua* seeming, *is;* but by definition it is not what it seems. Nevertheless it implies or points to being. Consequently, as Herbart puts it: "Wie viel Schein, so viel Hindentung aufs Seyn".[5]

[1] Benedetto Croce's estimate of the really vital elements in Hegel's teaching is one which the writer on the whole strongly approves.

[2] *Lehrbuch zur Einleitung in die Philosophie*, W. IV., p. 208.

[3] *Lehrbuch*, etc., Vierter Abschnitt, Cap. 1. Nachweisung der gegebenen, und zugleich widersprechenden, Grundbegriffe. *Cf. Hauptpunkte der Metaphysik*, W. II., p. 181. "Herausschaffung des Widerspruchs ist der eigentliche Actus der Speculation." *Vide ibid.*, Vorfragen.

[4] *Hauptpunkte*, etc., p. 185. [5] *Ibid.*, p. 187.

This two-fold method of stating the case determines the manner in which Herbart's Realism must be interpreted. From the first point of view the problem of philosophy is the strictly logical one of so arranging the elements of experience that inconsistency shall be removed—a task which leads to the artificial procedure of the "method of relations". From the second point of view reality, in the sense in which alone philosophy can understand the term, appears as an *inference*, and therefore not *as reality* but as *the concept of* reality. The paradoxical conclusion of the Herbartian Realism (a Realism based expressly on the duality of thought and the real) would seem to be a position from which reality is accessible only in the form of a Begriff.

The difficulty which the position entails needs no further statement; but a few particulars will serve to bring out the paradox.

The "method of relations," which Herbart is careful to distinguish from any mechanically applied mathematical formula, states in general the kind of expedient by which the thinker, when face to face with any definite, given contradiction, must proceed to a solution. The contradiction arises from the fact that two or more elements are *given only in conjunction*, whereas they cannot without contradiction be *thought* in conjunction. If M and N are such elements, A may represent the total given concept (Hauptbegriff) that includes them both. Outside A, M and N do not *occur;* combined in A, they contradict each other. Such a contradiction is found in the concept of *ground*, M (*e.g.* the two syllogistic premises), which, while distinct from that of *consequent*, N (*e.g.* the syllogistic conclusion), is yet incomplete and impossible without the latter. From the standpoint of thought, therefore, the conclusion N is the *completion* or supplementary concept (Ergänzung, Ergänzungsbegriff) which is needed in order to free the premises M from contradiction; while in so far as the concept M has reality (*i.e.* represents something original and actually given in experience *or* thought), N has the character of a "presupposition" and "point of reference" (Beziehungspunct). The problem, therefore, is to discover some device whereby the necessary supplementation of M by N may be effected without the simple and contradictory identification of each with each.[1]

It is obvious that this method of stating the question implies the Realistic presupposition that thought and reality

[1] *Hauptpunkte*, pp. 181-184.

are different; but the significant point is that in representing the Zusammen (the originally given complex real) as involving a *contradiction in thought*, Herbart by implication introduces some sort of amenability on the part of the real to the character of thinkability—so much, *i.e.*, as is implied in the capacity to contradict and be contradicted.—What is further significant is the implication on which his whole view of speculation rests—*viz.*, that there is a certain importance or perhaps necessity in showing how the demands of thinkability and what he would call "validity" may both be met.

Like his method of formulating the problem, Herbart's solution involves his realistic presupposition, and indeed may be regarded as amounting to little less than a tautological repetition of the main assumptions involved in his statement of the problem itself. As real, M is combined with other members. As thought, M must be separated from everything else. From this point of view, therefore, there must be, not one, but two or more Ms; and the general concept A, under which M and N are represented as identical, "leaves it undecided whether one or several Ms is meant". Here then is the condition which enables Herbart to resolve the contradiction in thought, while leaving reality standing. "If we think several Ms (or Ns) together" (*i.e.* in terms of the illustration, if we think the premises, the two-fold M, together) "definite results" (in this case the conclusion) "must emerge, in virtue of which the contradictory characters (Merkmale) will disappear." The presuppositions of the Together (*i.e.* the conditions which enable us to realise it—here the identical element in the premises), when found in each individual instance of M, give us right away the supplementary concepts. In other words, the middle term is directly responsible for the conclusion; but, adds Herbart, "the Together itself is identical with N".[1]

This example from the formal logic must not, of course, be pushed too far. It is only an instance of a universal principle which may find its material anywhere in the real. A further illustration of the method occurs in the I which can neither exist without, nor yet be identified with, its manifold and ever-vanishing object. "The conception of the I thus possesses in the fullest degree the peculiar property of speculative problems—that of contradicting itself. And the contradictions must be soluble, since the I-hood is ineradicably entrenched in consciousness. . . ."

[1] *Hauptpunkte*, p. 183.

"The identity of the object and the subject must be denied. Granted, therefore, the subject, we must postulate *something else* as object, or rather *several* other things as objects; and in their *Together*, the subject itself.

"(To recall the question of method, M cannot be simple; for it is in contradiction with itself, since, as thinkable, it must *not* be *one* with N, as valid" (*i.e.* as actual or actually applicable in the real world), "it must be *one* with N. To remove the contradiction means to deny the identity of the members. The result is a thinkable but invalid M and a valid but unthinkable M. But the thinkable, apart from N, looks forward to becoming valid through union with N. The valid *presupposes* that it is thinkable apart from N. Consequently both exist at once, or M is doubled.—This of course must be taken as expressing, not a literal duality, but in general a plurality of M. We conclude that the contradiction in A has its source in the fact that a single M, instead of several Ms taken together, had been believed identical with N.)" [1]

The difficulty of this solution may be stated as follows. Herbart begins with a composition (Zusammen) of elements, M and N, as an original datum of consciousness, and, therefore, valid and real. Since this composition involves contradiction it is unthinkable. The contradiction is removed by frankly distinguishing M *with* N from M *without* N. This leads to a new Zusammen—the composition, *viz.*, of all the different Ms which a scrutiny of the case in point reveals; and the combination appears as identical with N.—Now it is possible to understand this Zusammen where the two-fold M stands for the premises of a syllogism, and is consequently identical with the conclusion. The *togetherness*, however, is here intelligible only under the presupposition of a rational system, of which, indeed, the syllogism would itself be the formula. But surely such a solution is not calculated to throw light on the *real* togetherness of factors which contradict one another. In any case the rationally intelligible combination of premises in the conclusion of a syllogism is something entirely different (it certainly *should* be so on Realistic principles) from the combination as it will appear in other instances—in the combination of objects, for example, which Herbart identifies with the subject. How is this latter combination to be understood? Is there any uniformity of principle underlying the varieties of *togetherness*? Evidently not.[2] For Herbart expressly remarks on the

[1] *Hauptpunkte*, pp. 207-208.

[2] All the difficulties of the Herbartian presentationism spring originally from the attempt to work out the development of the togetherness

uniqueness of the individual instance, which must be examined on its own account with a view to discovering the nature of the Zusammen.[1] Thus Herbart concludes with the Realistic appeal to the uniqueness of the individual.[2] This is the abandonment of scientific explanation, and, as a matter of fact, the whole tendency of Herbart's thought [3] is in the opposite direction—in the direction, *viz.*, of an abstract logical handling of concepts not themselves real, but assumed to give the genuine *character* of the real when the latter is stripped of its superficial appearance and viewed as it is in itself. It is by means of this abstract logic that we learn to know the real which underlies, and which, as we have seen, is represented as an inference from, appearance.

This brings us to the second method of stating the function of philosophy. Once more a few illustrations will serve to make clear the highly rationalistic procedure of this Realism.

Unlike Schopenhauer,[4] Herbart has no difficulty in accepting *conceptions* as the object of philosophy.[5] He further distinguishes the province of philosophy from that of the other sciences on the ground that the latter are "immersed in the study of that which is either given or at least could be given".[6] As regards mathematics he writes in this connexion: "Even mathematics . . . as customarily treated, looks upon its most abstract formulæ as formulæ for possible cases, and very readily symbolises its functions in the form of curves, just as it leaves space out of the question, only to return to it with increased mastery. Philosophically treated, mathematics becomes itself a part of philosophy, which latter by its peculiar needs would be compelled to invent a doctrine of quantity if none were forthcoming." [7]

In the *Lehrbuch zur Einleitung in die Philosophie* Herbart again defines philosophy in contrast to the sciences as not

of presented objects without reference to any original unity in the subject.

[1] *Hauptpunkte*, etc., pp. 182-183.

[2] "Der Anknüpfungspunct, vermöge dessen nicht irgend ein Ich, gesetzt wird, sondern Ich Mich setze,—sind die eignen, unmittelbar gegenwärtigen Bilder." *Ibid.*, p. 209.

[3] So far, that is, as his general Realistic metaphysic is concerned.

[4] Schopenhauer's point is that while philosophy works with concepts, these constitute its instruments rather than its theme.

[5] "Die allgemeinen Begriffe, die hier den Gegenstand unserer Betrachtungen ausmachen," etc. *Über philosophisches Wissen und philosophisches Studium* (1798), W. I., p. 87. "Es ist nämlich die Eigentümlichkeit dieser unsrer Wissenschaft: dass sie *Begriffe* zu ihrem *Gegenstande* macht." *Ueber Philosophisches Studium*, W. II., p. 275.

[6] *Ibid.*, p. 275. [7] *Ibid.*

having to do with the comprehension of a given.[1] "But," he adds,[2] "when it is a question of philosophising, the object is presupposed as known, and for that very reason is called a *Conception* (Begriff)".[3] "From this we derive the definition of philosophy. Philosophy is an elaboration of concepts (Bearbeitung der Begriffe)."[4] The kind of elaboration gives us the different philosophical disciplines. Logic, for example, elaborates concepts with a view to rendering them clear and distinct. Metaphysics is substantially the application of the method of relations. ". . . The attempt to comprehend the world and ourselves introduces many conceptions which, as they are rendered clearer, permit less and less the desired unification of our thoughts. On the contrary they produce a cleavage in every theme on which they can exercise any influence. We often are at pains to avoid such conceptions entirely in the other sciences. But our pains are useless, and consequently there remains for philosophy the important task of *altering* conceptions of the sort in question along lines rigorously determined by the peculiar character of each individual conception. The alteration brings with it something new, by the aid of which the previous difficulty is got rid of. This new element may be designated a *supplementation* (Ergänzung). Consequently the supplementation of conceptions is the second way in which conceptions are elaborated. The corresponding science is called *metaphysics*."[5]

Thus we can only conclude that the character of the real as known by metaphysics is arrived at by a process of manipulation for which there is no other designation but the term *logical*. It is true that Herbart emphatically distinguishes logic and metaphysics;[6] but he does so by giving a very narrow and formal interpretation to logic. So long as metaphysics is defined in terms which exclude from it every element of *given* reality and limit it to conceptions, there can be no real grounds for the distinction, as Hegel clearly realised. To contend that the method of relations is relative to the specific nature of the material involved, and is, therefore, incapable of complete generalisation in the manner of a mathematical formula, is to say no more than that the con-

[1] In the *Lehrbuch* he brings mathematics and philosophy together on the ground that neither deals with the given. P. 49.

[2] P. 35.

[3] Presumably something we *conceive* to begin with—"soviel als *Begriffenes*, und nicht zu verwechseln mit einem *Inbegriff* irgend einer Art".

[4] *Lehrbuch*, etc., pp. 38-39.

[5] *Ibid.*, pp. 45-46.

[6] *Ibid.*, p. 55 (*Lehrbuch*, etc., 3rd and 4th editions).

ceptions involved are not mere mathematical symbols, but contain a meaning of their own; and the only real question is whether logic is or is not to exclude everything in the nature of concrete variable meaning.

It is very significant that modern Realism, owing little or nothing to the teaching of Herbart, diverges from his attempt to formulate the nature of the real chiefly by bringing philosophy more explicitly under the influence of a more adequate logic. The result, so far as one can judge from the sort of work that has been done, would seem to be an ever-narrowing definition of the sphere and problem of philosophy. The limit in this direction is reached by Mr. Bertrand Russell, who in his most recent volume attempts to restrict philosophy to that which cannot possibly vary from one world to another, thus excluding (or intending to exclude) ethics, which for Herbart still furnished a leading division of the subject.

It is now time to point the contrast to which this exposition has been leading. On the one hand modern Idealism, attempting to formulate reality in terms of its rational *content*, and finding a chief part, if not the whole of content, in relations, conceived as internal and constitutive, neglects to formulate a theory of relations, and ends by reaffirming the Kantian antithesis of appearance and reality—an antithesis which, in strict consistency, should have been, as it was by Hegel, entirely absorbed in the problem of the development of content. On the other hand Realism, postulating the distinctness of thoughts and things, attempts to define the real by developing the content of the *science* supposed to furnish a knowledge of it, and concludes by rejecting the given as in any way adequate to the ultimate character of the real. There remain the attenuated abstractions of a symbolic logic —a logic in which the proposition itself is superseded by the propositional function, and the only *reality* discoverable is the reality of abstract thought.—To complete the contrast we need only add that it has been left to Realism to take the first steps in developing that theory of relations which Idealism overlooked. Thus is Idealism haunted by the thought of a reality which is never fully explained or explicable by the conceptions at its disposal, while Realism, recognising in logically authenticated conceptions the only genuine knowledge, hands reality over to the custody of ideas.

To return, in conclusion, to the position of Kant as illuminated by the developments we have just traced, it would seem that phenomenalism, in so far as it implies the antithesis of appearance and reality, is a doctrine of which subsequent thinking has been able to make nothing. Neither Idealism

nor Realism can sustain the antithesis. The former, when consistent with itself, makes this plain; and in so far as it reverts to the distinction, it falsifies its own principles.[1] As for the latter, its professed purpose is to give the character of reality to that which authenticates itself at the bar of human reason—a process which leaves us with a collection of just such scientific truths as Kant relegates to the sphere of the phenomenal.

On the other hand it would be a radical error to see in the antithesis of appearance and reality as such the only or ultimate significance of the Kantian phenomenalism. That antithesis, when seriously meant, connotes in terms of being the same distinction which in terms of judging or knowing we conceive as that of truth and falsehood. But for Kant truth in the theoretical sense belongs exclusively to the sphere of the phenomenal. It is the agreement of thought with its *object*, and therefore, in the Kantian sense, with something genuinely *objective*. It was Schopenhauer's fundamental error (as indeed, though in a less crude way, it was Hegel's) to see in Kant's phenomenalism a subjectivism akin to Berkeley's. The truth is that phenomenalism, as Kant understood it, is the very opposite of subjectivism. The phenomenon is not the mere appearance (Erscheinung), but the appearance indued with a universality that is original and native to it. Subjectivism is unable to account for the uniformities of scientific knowledge except on pragmatic and utilitarian grounds. Phenomenalism is a theory designed to establish the objective validity of scientific principles by purging appearance of inconsistency, and although this can only be done by introducing the antithesis of appearance and reality, the antithesis, *in so far as it concerns the content of Kant's theory of knowledge*, is entirely negligible.

But if we minimise the antithesis of appearance and reality, it follows that the conception of reality itself loses in significance. And this is a point which we desire particularly to make. Philosophy has laboured long over a supposed reality, imagined as its peculiar object, and conceived to possess a certain superiority of being over all else. This has led to that strange antithesis so pronounced in Plato, and found also in Aristotle, between philosophy and experi-

[1] Present-day Idealism sometimes deludes itself as to the extent to which the antithesis dominates it, by repudiating *the theoretical unknowability* of the thing in itself. In this way it thinks it has disposed of Kant's position. As a matter of fact the antithesis returns upon it by the discovery of the *unthinkability* and therefore unknowability of the phenomenal. Hence the Bradleian resort to the Absolute.

ence or between the experienced man and the thinker. As we have seen the whole tendency of modern thought has been against too rigid a formulation of the distinction—although, it must be confessed, the issue seems to have been, both in the case of Idealism and of Realism, a more than ever pronounced reassertion of the difference. Be this as it may, it is because of the element of absolutism in his statement of certain principles that Kant has been held up to censure as a metaphysical thinker in the worst sense. It is surely evident however that to the absoluteness of principles as such no exception can be taken on theoretical grounds. Or rather, none can be taken except on the assumption that experience as such is not amenable to rigid and unvarying law, but must be taken at its face value as a flux or chaos, in the welter of which we may at times detect coincidences and even suggestions of uniformity. From this point of view knowledge and morality must not be regarded as in any sense absolute, but merely as the tentative commentary of consciousness and feeling on an ever variable, ever uniquely individual experience. It need hardly be pointed out that experience in itself, experience as *experienced*, does not compel us to accept this or any other special interpretation. It is not experience but a *conception* of experience which is here at work, and the result is just the opposite from that which is intended. In attempting to discredit metaphysics (or any doctrine based on professedly absolute principles), as an interpretation of experience, the advocates of this view exemplify the fallacy of doctrinally committing themselves to a special view of experience. There is justification, however, for their error in the traditional method of formulating the problem of philosophy in terms of the distinction of appearance and reality. So long as the issue continues to be thus stated, it is difficult at the present day, and becomes progressively more difficult, to avoid the conclusion that it is to experience itself (*i.e.* to the realm of appearance) that we must look for the metaphysically real. And this proposition, in itself thoroughly sound, has had the effect of more and more obscuring the issue by first of all depriving philosophy of all distinctiveness and then giving it the distinctiveness of extreme abstraction. This is really to reinstate the discredited opposition. Thus the vicious antithesis, an inheritance from the great age of Greek philosophy, perpetuates itself through a succession of vicious circles. The hopeful feature is that when the confusion has been tracked to its source in the method (implicit or explicit) of proposing the problem, it is suggested that deliverance may be looked for in a new point

of departure ; and recent thinking is not wanting in attempts to reformulate the matter from the beginning. It is coming to be recognised that reality (in so far as the term has any meaning at all) does not connote some transcendent entity, substantive and absolute, in contrast to which the whole world of familiar and transient things has the adjectival value of a partial qualification. Instead, reality is coming to be recognised as a class name, independent altogether of the question of degree, for whatever enters into experience, happens, or in any way is or affects us as conscious subjects in a world that is obviously more than ourselves. So far we might very well be in the region of radical empiricism ; but radical empiricism, though central among the recent theories to which we refer, is only one of the tendencies that have resulted from the disintegration of the old metaphysical problem. Meanwhile it is enough to notice that the opposition of appearance and reality vanishes through the absorption of the former member in the latter; and the path lies open for the reformulation required.

It is not difficult to see in a general way how this is to be obtained. In the end there are only two ways in which the metaphysical problem can be stated ; and these are both found in philosophy as far back as Plato. Either the problem is that of being and non-being, in their various forms and degrees, or else it is the problem of truth and the opposites of truth. Now although, as we have stated, this latter method of formulating the problem is well-known in philosophy, its successful application has been hitherto prevented by the preconception that it was somehow subsidiary to the solution of the problem as stated in the previous manner. This is the error of Plato, whose epistemology, although more significant and fundamental than his ontology, is formally subordinated to the latter. This too is the error that threatens modern realism, which otherwise appears to have come very near to realising the possibilities of the method in question. The result in each instance is the more or less deliberate abnegation of a genuine epistemology and the substitution for it of a highly formal logic. Hence the paradox, illustrated equally in the case of Plato and, recently, of Mr. Russell, of a radical empiricism (expressed in Plato's Protagorean theory of sensation and in Russell's subjectivism) subsisting side by side with the extremest rationalism. Such a dualistic position is the despair of philosophy, and indicates a failure in the synthetic work of thought. Fortunately the source of the difficulty is not far to seek.

The truth is that the ontological formulation of the meta-

physical problem continues to the present day to infect all endeavours at a restatement in terms of truth and its opposites, by narrowing down the latter opposition to the theoretical antithesis of what is and what is not. Outside the antithesis so stated there is the vast and all-inclusive opposition of the valid and the invalid, in relation to which theoretical truth and falsehood appear alongside ethical and æsthetic distinctions as a species under a genus. It is only by a frank recognition of the generic nature of this inclusive distinction, and a determination not to lose itself in one or other of the species, to the detriment of the whole, that philosophy can hope to emancipate itself from the difficulties of the ontological statement. If this is admitted we are now in a position to formulate the object of philosophy as the *scientific exposition of the principles of validity which give significance to human experience in every one of its distinctive interests;* and it is at once apparent that among the great historical systems, it is in the philosophy of Kant alone, if taken as a whole, and not merely as a criticism of knowledge, that any adequate approach to this method of reformulating the problem of metaphysics is to be found.

In this connexion we must notice once more the two-fold tendency of Kant's thinking—the separatist and the synthetic. Emphasising, as he does, the specific independence and mutual irreducibility of the principles which give significance to man's experience on its theoretical, practical and æsthetic sides, Kant at the same time so combines these principles that each of them loses its own significance apart from the others. We may say that it was necessary that the principles should be thus uniquely distinct and irreducible in order that man's life should be an integrated and intelligible whole.[1]

Nothing could be more instructive here than the contrast which Kant's position offers to Mr. Russell's. In the latter case we have the attempt to reach the unity of a distinctively metaphysical problem by a method of exclusion. The result is the complete disintegration of the meaning of life—the institution of an utterly unintelligible cleavage between the deeper and intenser interests of existence on the one hand and on the other the truth which somehow or other *should* constitute man's *deepest* interest and sole ultimate concern.

[1] The importance of the separatist tendency will be apparent. It is this tendency which makes Kant's rather than Hegel's rendering of truth the nearest approach yet made to synthetic completeness. The greater unity of the Hegelian system is the artificial product of bringing within the limits of a single method principles intrinsically distinct. Croce's characterisation of the fallacy as a confusion of distincts with opposites is admirable.

In Mr. Russell we have a philosopher with whom it seems to be a *moral* obligation to leave philosophy as little room as possible in the universe, and at the same time an ethical enthusiast in whose eyes morality is itself reduced to the level of standardless subjective feeling.[1] In his latest volume, as we have already remarked, he has expressly excluded from the philosophical everything that can possibly vary from one world to another. From such a standpoint as this it must appear as indefensible a paradox as the *credo quia impossibile* appeared to Nietzsche, that any system of thought should, like the Kantian, claim distinctive merit (not to say special validity) for a view which enables us to affirm at once a world of knowledge universally determined by physical law, and a realm of freedom unconditional and absolute, a view which limits the knowable to what experience can verify and yet professes to establish immortality on demonstrative grounds. Even within the sphere of the strictly theoretical the principles which Kant formulates with such confidence as *a priori* universals, causality for instance, reduce in Mr. Russell's opinion to little more than generalisations from experience, suggesting constant functional relations. The full force of the diversity of view will however appear only if we consider that while for Russell this invariability of principle from one world to another, the product of extreme abstraction, is what makes philosophy possible, for Kant the function of philosophy, broadly considered, is to justify the simultaneous validity, in *different* worlds, of principles which in the abstract contradict one another.

This gives us the standpoint from which alone we can rightly estimate the significance of Kant's phenomenalism in its relation to metaphysics. Where knowledge is determined by the *principles of knowability as such*, the conditions of the case require that it be confined to phenomena. This is necessarily so because to refer knowledge to things in themselves would be to place it at the mercy of principles inherent in the latter. It would therefore be no longer knowledge determined as such by its own principles. Rightly understood, the Kantian phenomenon is in the last resort merely the objective correlate, in actual knowledge and experience, of the intrinsic principles of knowability revealed on reflection. This method of stating the matter shows at once why it is that knowledge must be limited to phenomena, and cannot at the same time refer (as Trendelenburg thought

[1] *Vide* his recent article on war in the *International Journal of Ethics*.

possible) to things in themselves. If, beginning with the principles of knowability, we seek to determine the character of the object corresponding to these, it is obvious that in the first place this object must be relative to these principles. That is, it must be defined in terms of that which makes it knowable, or as an object to a subject. Hence it must be phenomenal. In such a view of knowledge and the knowable, the absolute character of the metaphysical must be entirely excluded from the object known, and this is the exact extent and meaning of Kant's position when he denies the possibility of metaphysics. Metaphysical reality is not to be found in the character of the object as defined by the principles of knowability. On the other hand these principles themselves (even admitting their limitation to a specifically human experience) are exactly metaphysical, as Kant, for example, defines that term (and rightly defines it) in the *Lectures on Metaphysics*. They are *a priori* and universal, and are by no means abstractions from the experience in which they are exemplified. Thus even if we confine ourselves to the sphere of knowledge in the narrower sense, we are bound to conclude that Kant's epistemology implies the recognition of metaphysics. Our further contention was that the metaphysical must not be limited to the thinkable, but that there is a sense in which even for Kant metaphysical truth is *knowable*. It is knowable not as an *object*, not, therefore, in the sense in which knowledge is technically defined in the *Critique of Pure Reason*, but as a principle. The difference is the same as that which Kant expresses in the distinction of formal and material knowledge, but perhaps the real nature of the distinction is better conveyed in the way in which we have expressed it. If so, the whole matter could be summed up by saying that the principles of the knowledge of objects are not themselves objects of knowledge, but they are not on that account unknowable.

The rest follows almost of itself. If the principles of knowledge, though not known objects, are yet metaphysically knowable, the same thing will naturally hold of any other principles discoverable in the same way in experience. But Kant goes farther than this. He gives an exposition of morality which connects the latter as an implicate with the logically incomplete universe of phenomenally limited knowledge. This development is of first-rate importance as revealing to what extent Kant implicitly discards the last vestige of an ontologically conceived thing in itself. The latter could not be retained in the world of the knowable without destroying the autonomy of a knowledge found to

rest upon its own principles and deriving its validity from conformity to these. To a metaphysical knowledge of the thing in itself, of course, no objection could be offered on such grounds. Only, such a knowledge had no longer any meaning. The independence and absoluteness postulated in the thing in itself being found incompatible with the character which rendered anything whatever an object in the Critical sense, *viz.*, amenability to the principles of knowability, and the thing in itself being *conceivable* only as an object in the pre-Critical, rationalistic sense—*i.e.* as an ontological entity, we have the curious contradiction of the object in itself. This we can regard as a mere logical formula, the product of divergent lines of thought, and signifying rather a mutual cancellation than a combination of elements. To avoid the contradiction it was necessary only to remove one of the members; and according as one or the other is removed, we have either the phenomenon (object) or else an absolute which is not an object and must therefore be a principle. Such a principle was obviously to be found in freedom or morality, which became the substitute for the ontological thing in itself, now reduced to meaninglessness. And here once more, in morality, we have all the conditions of metaphysical knowability—a priority and universality of application. The character of such knowledge now becomes clear. It is knowledge in the sense of an *intelligent consciousness* of principles, epistemological or other, deriving its validity not from conformity to the principles of knowability but from the validity of the principles of which it is the consciousness. Thus the metaphysical knowledge of morality, like the metaphysical knowledge of *knowledge itself*, finds *its* principle in the *principle known*, not, as in the case of the known object, in the conditions of knowability itself. If this is so Simmel's indictment of Kant's ethics, along with a considerable amount of incidental truth, must contain an element of radical error. The thing of importance, however, is that metaphysical knowledge, thus fundamentally differentiated from the objective knowledge contained in science and experience, is none the less implicated with the latter in such a way that everything begins with experience and what we find there. The phenomenalist epistemology which negates the ontological metaphysics of the past is the key which unlocks the door leading to a new metaphysics—a metaphysics having to do with every principle that determines the significance of human life.

III.—BEING AND BECOMING.

By L. M. Passano.

I.

"General ideas," says Emerson, "are essences. They are our gods: they round and ennoble the most partial and sordid way of living." It is, then, not to be wondered at that man's most general idea should be handed down from age to age, that the riddle of the meaning of the cosmos should offer itself for solution to each new generation. The search for a solution is doubtless largely a threshing of old straw, but none the less does each generation garner a few grains of corn into the store-house of truth as food for the inner life; and though it may well be that there is no answer to the questions, "What is man, that Thou art mindful of him?" and, What art Thou which art mindful of man? yet many partial answers have been offered, in general from two markedly contrasting, indeed often bitterly opposing points of view. The terms of this opposition change, but after all necessity and free-will, materialism and idealism, the mechanistic principle and the teleological, monism and dualism do in a way but illustrate the metempsychosis of the spirit of the idea through the body of the word. It is not our purpose to examine, or re-examine, in detail these systems under any of their names, but merely to point out, as we sketch the outline of the system which we accept, a few important particulars in which the opposing view seems fallacious. In conclusion we shall indicate briefly some evidence furnished by the theory of relativity in general support of our own views.

It is now universally conceded that to the physical world the mechanistic principle applies. The principles which prevail in the world of inanimate nature obey the laws of mechanics; and these laws, capable of exact mathematical statement, are simply the formal and generalised expression of what these principles are found to be by observation of physical phenomena and by experiment thereupon. When,

however, we enter the realm of the animate the idea of purpose is thrust upon our notice, and it is the phenomena of consciousness, more specifically of the will, which lead to the opposing views of teleology and mechanism, of dualism and monism.

We find it impossible to accept the dualism which marks off the animate and the inanimate as lying in two separate realms, or that which completely differentiates mental and physical life. Matter and mind-stuff, to use the terms of W. K. Clifford, are not for us distinct entities of such a nature that consciousness, "a stream of feelings," cannot "interfere with [or] influence" the body, which is itself an automatic, physical machine. The fact of consciousness, or more specifically the will, in man and other animals will not be denied, and its presence in plants also is accepted by many;[1] but the nature of consciousness or the will is a subject of dispute. In our view, as will be explained more fully, the will is a store of energy and an act of will is a liberation of stored up energy. That this is so, or that the will is a force, is denied by Clifford and others on the ground that the assumption would imply the creation of energy, somewhere in the process, when a stimulus passes through a sensory nerve to the brain and out through a motor nerve; a contradiction of the law of the conservation of energy. Clifford's statements[2] were made before the discovery of radium, the compounds of which are known to remain continuously at a higher temperature than the surrounding atmosphere, and the energy of which, stored in the atom, though not inexhaustible, is very great in quantity. It is conceivable at least, even if not demonstrable, that in organic matter, complex as it is, there may be a store of atomic energy which in the brain would constitute the will, or more generally the mind.

Clifford remarks that it is not right to say the mind is a force, "because if the mind were a force we should be able to perceive it". It is difficult to understand what he means by perceiving a force. We can perceive the effects of a force, the phenomena which follow a liberation of energy, and the teleologist maintains that he sees precisely such effects due to the action of the will. Clifford, on the other hand, while he accepts the existence of "mental facts" which accompany "physical facts," denies that either can in any way interfere

[1] See J. C. Bose, *Plant Response, Researches on Irritability of Plants.*
[2] His address, *Body and Mind*, from which we quote, was delivered in 1874.

with the other. It "is not untrue," he says, "but it is nonsense [to say] that the will influences matter". If, however, the will be a store of pseudo-radioactive or other kind of energy, the statement is by no means nonsense. Clifford uses the word influence to mean the action of matter upon matter. It hardly seems a valid argument to say that "the only thing which influences matter is the position of surrounding matter or the motion of surrounding matter," and that, therefore, mind cannot influence matter. The contention of the teleologist is that there is in the will just this immaterial thing, which we believe is a store of energy, which does influence matter. Indeed, in the study of radioactivity we seem to be brought face to face with an instance of matter, using the term in Clifford's sense, being influenced by the immaterial. The γ rays, which are looked upon as immaterial particles, have the power to ionise gases; that is, to break up molecules of the gas into parts charged respectively with positive and negative electricity. If this be true there seems no reason why volition may not be considered a similar phenomenon; and the discontinuity in the action of matter upon matter, the point at which energy is liberated, cannot be called a place "where physical causes do not apply".

To admit the possibility of discontinuity may, as Clifford says, "leave the way open for the doctrine of a destiny or a Providence outside of us," though not necessarily "overruling human efforts and guiding history to a foregone conclusion". Even if it do so the scientist should not fear to leave the way open for the entrance of possible truth in any form, and we may suspect here scientific prejudice as illiberal as the prejudices of teleological polemics. Perhaps if Clifford, instead of saying Providence or destiny, had been content to say merely that which is outside of us, he would have been more willing to leave the way of entrance open. Science, as well as religion, has its superstitions.

We are not, however, arguing for the existence of discontinuity in such phenomena; indeed, we believe the process to be strictly and physically continuous—but we cannot accept the theory of non-interfering mental and physical phenomena moving on "parallel planes". No more can we accept a discontinuity permitting the entrance into the sequence of events of a super-consciousness, whether this be purposive or unpurposive. We do not deny the super-consciousness; we simply deny the necessity thereof to the sequence of events in question.

II.

Whether "hard and heavy matter" be one day shown to be ether in motion; whether the atom be a whirl or vortex-ring producing a strain or tension in the ether; whether it be a sphere of positive electricity in which negative electrons revolve, or an infinitely minute, one-dimensional particle (*Hohlraum*) moving with the velocity of light—in any case the atom would seem to imply energy, and a material body to imply a store of energy. We believe the atom is energy, and that mass is energy or a store of energy due to motion. The idea of motion, of a store of energy, would seem to be essential to any theory of matter and the atom. To the theory and its essential idea add the facts of chemical affinity, of radio-activity and of electro-magnetism, and we venture to say that what is known as life, man's will, the will of organic matter—to say that life is stored up energy differing in degree, but not in kind, from other stored up energy, and that an act of the will is a setting free of a portion of this energy. The will would act according to mechanical laws, would be mechanistic, precisely as gravity, chemical action, and radio-activity are mechanistic; while these, on the other hand, would imply life, consciousness, just as the will implies life and consciousness.

Man performing an act of will is said to be conscious, while a stone performing an act of falling is said to be unconscious, but we believe the acts are the same in kind. The will acting in the brain of man, a liberation of energy, causes movement in the brain or possibly of the whole organism. Gravity acting in the atoms of the stone, a liberation of energy, causes movement of the stone. When one uses the term "conscious" one would seem to have in mind too exclusively the consciousness of man. If, step by step, beginning with man, we follow back the idea of consciousness through the higher animals to the lowest forms of organic existence, animal or plant, consciousness at every step being accompanied by stored up energy and liberation thereof—if we follow back this idea through complex chemical compounds, through radio-active substances, to the primitive ether whirl which possesses a store of energy, electro-magnetic or due to stress and strain—if, step by step, from the highest to the lowest we follow back the sequence, it may be doubted if at any point we should be able to say, on this side lies consciousness on that side unconsciousness; on this side the animate, on that side the inanimate. The vegetable world is organic. Is a plant conscious or unconscious?

There are organisms such that we are uncertain whether to classify them as animal or plant. Are they conscious or unconscious?

We are fully aware that it is a logical fallacy to say that because consciousness implies a liberation of energy, therefore a liberation of energy implies consciousness. That is not our argument. We contend that the descending scale of liberation of energy from man to lower animals, to plants, to radio-active substances, to chemically active substances, to inert substances, the last possessing at least the energy of gravitation, is nowhere delimited. If this liberation of energy be called consciousness in man, it should be so called throughout all the steps of its descent. We offer a categorical statement of the case as follows:—

1. All the scientifically tenable theories of the nature of the atom describe it as energy or motion. Mass, an assemblage of atoms, is a store of energy.

2. An act of will, from its observed effects or consequences, connotes an addition to the energy involved in a physico-mental-act. This does not, however, contradict the principle of the conservation of energy. A portion of the consciousness-energy has been transformed or transferred; the energy of the system remains the same.

3. This increment of energy is derived from the store of energy which constitutes the organism; is a liberation of stored up energy.

4. Consciousness is a term of wide connotation, embracing the knowledge of the Me as shown in divers forms from man to the lowest grades of animal and plant. It is impossible to fix its exact delimitation.

5. Consciousness has as concomitant the liberation of stored up energy.

6. There are instances in which stored up energy is liberated from inanimate or unconscious matter, so called; that is, liberated without external stimulus.

7. Of different radio-active substances some possess greater power than others to liberate energy, and in chemical reaction there is every gradation of energy liberating power from the most active to the most inert. At the bottom of the scale lies gravity-energy which can be liberated and which is possessed by every substance.

8. There is no delimitation to the degree of external stimulus which may accompany the act of liberation of energy from the consciousness of man to gravitation.

9. It would not seem erroneous, by reason of item 4, to call all cases of liberation of energy, with or without external

stimulus, voluntary acts or acts of will, and to call the synchronous state of the liberating body a state of consciousness.

10. Any body, any aggregate of atoms, which possesses the power voluntarily to liberate stored up energy is animate or conscious. Any aggregate of atoms which does not possess this power is dead.

11. Life is of varying intensity, and the individual is of greater or less complexity. There may be variations or fluctuations of consciousness or life (sleep and waking) in the individual; variations or changes of degree, and more or less permanent in character (chemical change).

12. By virtue of the possession of gravity all matter is living. Gravitation is the lowest and universal form of life, and no matter is absolutely dead. There is no absolute death in nature as we know it.

13. Inquiries into the origin of absolute life have no meaning, except in so far as they may be inquiries into the origin of the entire universe. Inquiries into the origin and characteristics of any particular form of relative life, as well as into the relations between the various forms, are the legitimate field of science.

III.

While the phenomena of consciousness, in our theory, are not separated from those of the physical world, still a distinction is made between subjective and objective phenomena. It has been pointed out that an act of will may be regarded as a liberation of energy; all subjective phenomena may be so regarded; every feeling is a liberation of stored up energy. On the other hand, every objective phenomenon of the physical world is a result of subjective phenomena, a result of liberations of energy. We cannot perceive feelings, or thoughts, or sentiments; we can perceive only their sequelæ which we call objective phenomena. We do not perceive the liberation of energy in a man's act of will or a stone's act of gravitation; we perceive the sequelæ.

On the table is a ball of which we shall disregard all the properties except colour. There is a subjective act, a voluntary liberation of energy, resulting in light falling upon the ball. The light is reflected to the eye and carried to the brain. There have intervened other liberations of energy, for of course it is not meant that the actual light is carried to the brain, but for simplicity we omit consideration of these others. Then in my brain there is a liberation of energy, and the colour of the ball is seen. The objective phenomenon, colour,

is the resultant, the sequela, of two subjective phenomena, two liberations of energy, one in the source of light, the other in my brain. Nor are we assuming two objective phenomena in the usual sense, brain and light-source, to explain one colour; for they also are the resultants of antecedent or synchronous subjective acts.

The objective phenomenon colour may not be the same for you as for me. For you the colour is the resultant of the subjective acts of the source of light and *your* brain. The liberation of energy in our two brains may be different in degree, so that you see the colour green while I see it red. The same ray of light may fall upon the same ball, and pass to the eye and optic nerve of a third person whose optic ganglion has been atrophied or destroyed. In his brain there will be no liberation of energy, no subjective act, and for him there will be no objective phenomenon, no colour. But even if all three persons were absent the ball would reflect only rays of a definite wave length. The selective process at the surface of the ball, by which some wave lengths are absorbed, others reflected, may be a voluntary liberation of energy in the surface atoms, so that, possibly the ball may be said to have absolute colour; but even in this case the objective phenomenon is the sequela of at least two subjective acts. If on the other hand the liberation of energy in the light source were such that only those wave lengths absorbed by the ball were sent out, there would be no objective phenomenon, no colour either relative or absolute.

We may next imagine a being, an aggregate of atoms, of any degree of sentience, performing a subjective act for the first time, for the first time liberating stored up energy. The subjective act is followed, let us say, by an objective phenomenon. A second subjective act is performed, a third, and so on indefinitely. The second and following acts may or may not be performed with greater ease than those preceding, but there would seem to be, in general, an increase in facility, or at least no decrease. Greater ease of performance might be called habit or incipient habit, leading with still greater ease of performance to confirmed habit or memory. Thus habit and memory are the results of subjective acts, and may be called subjective states. In the aggregate of atoms objective phenomena, movements, would often accompany the subjective acts, and thus more or less definite habits of body might be formed. There may be a distinction also between ancestral habit and memory, and those of the individual, the former resulting in instinct; though there would be no sharp line of division between the two types.

The beating of the heart, for example, may be a habit resulting from ancestral liberations of energy extending from gastraea to man.

Repetitions of a definite subjective act give rise to a definite memory. Repetitions of many and varied subjective acts, accompanied in general by corresponding objective phenomena, constitute the subjective state, general or absolute memory. Absolute memory is consciousness, and is not, it must be borne in mind, an attribute of so-called living beings only, but is an attribute in greater or less complexity and degree of all things. Absolute memory is the resultant of all individual, ancestral, and ur-ancestral voluntary liberations of stored up energy, and in it are involved three fundamental concepts, space, time, and causation.

Time and space are subjective, not objective. My space and time may be very unlike your space and time; man's space and time are not the space and time of the amœba. The subjective acts which have given rise to absolute memory and the objective phenomena which, in general, accompanied the subjective acts were a succession of events. This is time. Moreover, the subjective acts which have given rise to absolute memory and the corresponding objective phenomena were in many cases simultaneous, not successive, events. This is space. Time and space are subjective states arising from sequence and simultaneity of subjective phenomena. We do not say that space is infinite, that time is eternal. Synchronism and sequence of subjective phenomena do not, it is true, connote a beginning or an end, and, therefore, absolute memory cannot say that space is limited or that time is finite. On the other hand, to the question whether space is absolutely infinite, time absolutely eternal, it can only reply *ignoramus*.

The third component of absolute memory is causation. The subjective acts which give rise to absolute memory possess a third attribute, order. Subjective act A precedes subjective act B, subjective act B follows subjective act A, in the ancestral as well as in the individual act. This constitutes order, the causation of absolute memory. We give causation no teleological significance, it is not *a priori* truth. My causation, my cause and effect, may not be identical with yours. Man's causation is not that of the amœba. Causation is not the same for man to-day as it was a century ago, and need not be the same to-morrow as it is to-day, for other subjective acts may come to be recognised as forming an integral part of any given order.

With this conception of time, space, and causation as the

basic content of absolute memory; with the conception of absolute memory as the resultant of ceaseless and innumerable individual and ancestral liberations of energy; with the conception that these characteristics belong, not to man alone, but to all things—with these conceptions we cannot believe that human life, or amœban life, or even atomic life in its lowest form can be called empty and vain; nor that a time and space which are the resultant of acts of living, of liberations of energy, can be thought of as "that in which all things pass away". No more can we believe, with Mr. Bertrand Russell, that "brief and powerless is man's life; on him and all his race the slow, sure doom falls pitiless and dark [while] omnipotent matter rolls on its relentless way". For man is, as are all things else, a part of this omnipotent matter, this energy, in which "we live and move and have our being". For man, as for all things else, there is change, there is evolution or Becoming; but for man and for all things there is also Being, the Continuity of Becoming.

IV.

We have based our system upon one fundamental idea, the liberation of stored up energy. We have not, however, made any attempt to define energy, nor shall we do so. In this respect, we contend, our system is no weaker than any other. The teleologist bases his system upon a more or less anthropomorphic deity; the materialist bases his upon matter, or upon matter and motion. The *a priori*, it would seem, must underlie any system, and our *a priori* assumption—or fact, if you will—is energy, the common attribute of all things. It may be true, with modifications it probably is true, that the laws of motion, the principles of mechanics are the generalised and formalised statement of the nature of energy, of the nature of life. In this respect our universe is mechanistic. But we have said with modifications, for our generalised and formalised statement is, beyond a doubt, partial and incomplete. Whether it shall be found when our statement has become full and complete—if it ever so become—that energy is one and unchangeable we do not know. We are led to believe, however, that energy is one and unchangeable. This is not a teleological hope—or fear—it is not an act of faith, for we believe it is based upon evidence.

Science recognises transformations or transferences of energy, and it is true that ours is a universe of becoming, of liberations of stored up energy; but back of, deeper than all becoming lies being. All things are, as well as all things

become. Being is the continuity of becoming, and it is this that we consider evidential of the unity and unchangeableness of energy.

Being, continuity of becoming, in an aggregate of atoms is individuality, is the ego. In this sense the solar system is an individual composed of other individuals. Man is an individual composed of other individuals, the body cells, each having the attribute continuity of becoming. Discontinuity of becoming means partial death or individual death, but this, as we have pointed out, is not absolute death. Man does not die because a constituent cell has died; the earth does not die because a constituent aggregate of atoms has died; the solar system does not die because a constituent world has died.

When two pieces of iron are welded together, or when copper and zinc are fused, there arises a new individual. When ovum and spermatozoon unite there arises a new individual. Upon cell cleavage, or the division of an amœba, a new individual arises. The new individual may differ in its characteristics in varying degree from the individuals which produce it. In the case of the welded iron, in the case of the fused copper and zinc, in the case of the ovum-spermatozoon union, an external agent, an external store of energy, brought about the production, the birth, of the new individual. When a cell, when an amœba divides, when a radium salt disintegrates, when aphis produces aphis asexually, new individuals arise, are born, without the agency of external stores of energy;[1] new individuals in varying degree like or unlike those from which they arose. The birth of new individuals is not a uniform process in either the animate or inanimate worlds so called, but in both these realms similar diverse processes prevail. There is no inanimate, as we have said, but a rising sequence of life from the mere possession of gravity to the complexity of man, while through the whole sequence there runs the continuity of becoming.

Continuity of becoming would seem to be implied by the phenomena of becoming, by evolution which deals with becoming, or better which is a generalised and systematised statement of the observed facts of becoming. Evolution makes no statement as to the continuity of becoming except in so far as the particular implies the general. Continuity is the common characteristic of all the observed phenomena

[1] This whole matter is relative. Man brings about the union of ovum and spermatozoon, but also spermatozoon actively seeks out ovum. Parthenogenesis in the aphis appears to be contingent upon external heat and light.

of becoming. To argue from becoming in our universe to continuity of becoming does not necessitate arguing from continuity of becoming to the becoming of our universe. All A is B does not imply that all B is A. It follows, therefore, that continuity of becoming still remains even if the interpretation of becoming in our universe, our theory of evolution, be wholly or partly false.

Upon this basis alone rests any mathematical conception of space. The concept of space, arisen from simultaneity of subjective acts ancestral and individual, and practically the same for all men, is three-dimensional and Euclidean. Continuity of becoming may, however, include n-dimensional and Riemannian space. But to argue from this possibility to the possibility that ours is an n-dimensional or a Riemannian space and to believe that it actually is so is an attitude of mind which has been well named mystical.[1] We do not wish to be misunderstood. Our space, the resultant of subjective acts, is three-dimensional and Euclidean. A thousand years from now, fifty years from now, it may be four-dimensional or non-Euclidean. Indeed, if the mathematician assert that his space is now four-dimensional we cannot deny it, though we may be permitted to doubt and to suspect that there has been transferred to science a characteristic of religious belief—mysticism.

Whether we shall call continuity of becoming God or the divine we shall not offer to suggest, for as Bacon says, "It were better to have no opinion of God at all, than such an opinion as is unworthy of Him; for the one is unbelief, the other is contumely". If there be an omnipotent, supreme divinity, identical with or superior to continuity of becoming, it is as independent of mechanistic or scientific argument as it is of teleological and anthropomorphic misrepresentation. The religious instinct is a fact of man's life, is a component of absolute memory, precisely as are the æsthetic instinct, the philosophic and the scientific. Indeed, these instincts —the word seems appropriate enough—are not wholly independent of each other, could not be so if absolute memory be what we consider it to be. It follows, of course, from our conceptions that religion is a growth, an evolution; that it is so is now generally conceded on other grounds and without reference to its origins. As has been said, religions are "the infinitely curious products of man's imagination and of man's reason in its infancy";[2] and we would add in its maturity. Moreover, if the pietist declare that his religion

[1] *Mysticism in Modern Mathematics*, by Hastings Berkeley.
[2] *Orpheus: A General History of Religions*, by Salomon Reinach.

is revealed we cannot, with our conception of absolute memory, deny that it is so, any more than we can deny the four-dimensionality of the mathematician's space. But in this case also we may be permitted to doubt without, it is hoped, engendering denunciation and invective.

We describe our system as one of idealistic dualism, but the dualism is not teleological in either the broader or the narrower sense. We have assumed an unknown energy and an unknown ether. If energy or mass (the terms are synonymous) be regarded as "non-matter in motion," we believe there is still dualism in the two conceptions motion and non-matter. The conception non-matter either implies its opposite, matter, or is itself a direct conception which might be called as well matter as non-matter. If, however, we make but the one assumption of energy, or motion, non-matter being absolute emptiness, vacuity, we venture to assert that vacuity is a conception impossible to man's absolute memory. If energy be electro-magnetic, a system based upon positive and negative electricity would be dualistic. If positive electricity be simply a mobile arrangement of negative electrons, we still have the negative electron and its motion; unless we assume motion together with vacuity. Granting the possibility of the conception vacuity in motion, we still have the conceptual dualism of Becoming and Continuity of Becoming.

V.

In general the principles of the theory of relativity are consonant with our system, but some of the conclusions of that theory appear to us to be false. If space and time be, as we have stated, conceptions of simultaneity and sequence of subjective acts, of liberations of energy, it would appear to follow logically that space and time are not independent, and that the laws of their dependence can be mathematically expressed; but the sequence of subjective acts (time) need not, does not, add a fourth dimension to simultaneity of subjective acts, man's space. Nor does it militate against our system that in order to express this dependence a system of non-Euclidean, four-dimensional geometry may be used. This is merely a convenient, though not necessary, mathematical device to express the relations between space and time, and only "mystically" can it be said that space has more than three dimensions. On the other hand, man's present interpretation of phenomena is doubtless incomplete, and the progress of becoming, evolution, may in the future

give rise to a space-time-causation conception in absolute memory very different from that of the present.

The conclusion reached by the relativity theory that the mass of a body is equal to the energy is in agreement with our assumptions concerning energy, and the assumption that absolute mass, that is, mass determined by a person at rest relatively to the body, is known, would seem to be but another way of leaving energy undefined. Possibly absolute mass may be regarded as the energy of a body at rest in free space, free space being absolute simultaneity, simultaneity without sequence of subjective acts in the universe. We fear the idea is inconceivable; space without time. Absolute mass, as we shall presently point out, need not be constant. Its value might perhaps be a maximum under the conditions just adverted to, of rest in free space, and a minimum if the entire cosmos were in motion with the velocity of light. The analogy of the two assumptions of absolute rest and absolute motion, as we may call them, is obvious.

On the other hand, the conclusion that "there is no such thing as the absolute simultaneity of events happening at different places,"[1] seems to be falsely drawn. The statement is based upon the proof that if an observer on a system S has two clocks which mark simultaneity for him, the clocks will not appear simultaneous to an observer on another system S′ moving with a velocity v relative to S. But the clocks, it may be remarked, are simultaneous to S and could be made simultaneous to S′, so that both observers have an identical conception of absolute, that is, exact simultaneity. Moreover, all observers would have the same conception of exact simultaneity, a conception which is not vitiated by the impossibility of identical measurement. The sequence and simultaneity of subjective acts and their concomitant objective phenomena are independent of the possibility of absolute measurement of the interval between two events, and independent also of the length and uniformity of the interval.

Man's first clock ticked at sunrise and at sunset, and the unit of time was variable. If we hear a clock chime the hours and quarters the unit is shorter and less variable; still shorter if we listen to the ticking of a clock or watch. We see a man walking in discontinuous steps; we know that there is an interval between two events in cinematograph pictures, although the discontinuity is not perceptible.

[1] *The Theory of Relativity*, by Robert D. Carmichael. See also H. Poincaré, *La Valeur de la Science*. The word absolute has not the same meaning here as in the phrase absolute simultaneity of the preceding paragraph.

Whether the discontinuity lie primarily in the subjective acts, liberations of energy, or in the objective phenomena, in either case from discontinuity of subjective acts, at intervals as small as we please, we arrive by induction at the conception of the continuity of time, let us say of psychological time. Sequence of the objective phenomena which accompany subjective acts may be called physiological time, and is capable of measurement. Even if physiological time be discontinuous and incapable of absolute measurement by an exact and invariable unit, the conception of the continuity of psychological time, and the conception of simultaneity of events are not affected.

To one other conclusion which is sometimes drawn by relativists we are disposed to take some exception. Relativity derives the following formula for l, the longitudinal mass, that is, mass in the direction of motion, of a body moving with a velocity v with respect to a system S,

$$l = \frac{m}{\left(1 - \frac{v^2}{c^2}\right)^{3/2}};$$

where c is the velocity of light, and m the absolute mass of the body. From this formula, or law, the conclusion is drawn that as v approaches the limit c the longitudinal mass approaches infinity, and that, therefore, an infinite force would be required to give a material body the velocity of light. This statement assumes that m, the absolute mass, even if not constant, has always a finite value and continues finite as v approaches c as a limit. But there are cases in which the absolute mass of a body does not remain constant,[1] and it may possibly be true that, as the velocity of a body approaches the velocity of light, the absolute mass of the body approaches zero.

The case in question is when there is impact between two particles which are not perfectly elastic and which, therefore, remain together. The sum of the absolute masses (energy) in these circumstances "would be increased by the heat (or mass) produced by the impact and obtained from the 'kinetic energy' of the relative motion".[2] It is conceivable that a body acquiring a velocity equal to that of light would have its absolute mass decreased by the heat required to separate its particles; heat given back to the "kinetic energy of the rela-

[1] E. B. Wilson and G. N. Lewis, *The Space-Time Manifold of Relativity*.

[2] Wilson and Lewis, *loc. cit.*

tive motion". That is to say, there would be a sort of reversal of impact, a tearing apart of the particles of the body, with a corresponding decrease of absolute mass; and in the case of the extreme velocity of light the disruption would be so great as to make the absolute mass infinitely small. Light is, so to speak, the apotheosis of mass or energy. A body moving with the velocity of light would become light, and its absolute mass would be zero. The longitudinal mass (energy) would in that case take the indeterminate form $l=\frac{0}{0}$, which might have, mathematically, any value whatever, and physically, a value to be otherwise determined.

If, however, the absolute mass of a body moving with the velocity of light be not zero but a finite number, it seems worth while to point out that very great velocities may be reached without increasing the longitudinal mass by an enormous amount. If the velocity of the body be nine-tenths the velocity of light, the longitudinal mass becomes about twelve times the absolute mass; if v be ninety-nine one hundredths the velocity of light, the longitudinal mass becomes about 360 times the absolute mass. Thus v must increase from 0 to about 170,000 in order that l should increase from m to $12m$.

We may imagine a nebula in space as being nearly pure light-energy, moving with a velocity very nearly that of light. Its absolute mass might be infinitesimal or finite, and its longitudinal mass, perhaps, infinitesimal also; perhaps infinite. As the velocity of the nebula decreased its absolute mass (energy) would increase, and its longitudinal mass would decrease; until, the velocity having reached the ordinary range of our observations, the nebula would become ordinary mass (energy), a star, that is, a sun, a "dark body," to be again transformed into pure light by some cataclysm. Thus the universe goes on in involution and evolution of energy, while beneath all runs the steady current of continuity of becoming.

To summarise our system we may say, the atom is energy and mass is a store of energy. Energy is life, and to live is to liberate stored up energy, the liberation of energy being a subjective act. Two or more subjective acts give rise to an objective phenomenon. All things are living, the lowest form of life being gravitation. Repeated liberations of energy, ancestral and individual, form or constitute habit, memory and absolute memory, or consciousness, of which the fundamental concepts are space, simultaneity of subjective acts; time, sequence of subjective acts; and causation, order of

subjective acts. Liberation of energy in time, space, and causation is becoming, or evolution; the common characteristic of all phenomena of becoming is continuity. Continuity of becoming in an aggregate of atoms constitutes the individual. The individual may die, but absolute death is not. We do not define energy, we do not explain life; but also we do not personify these ideas. To us they are neither occult nor mystical, but natural, for they are "nature". Mysterious they may be, mysterious and wonderful as all is mysterious and wonderful. Perhaps, however, it is not too much to say that the fullness of life gives us hope that the fullness of time may give knowledge.

IV.—WILLIAM OF OCKHAM ON CONTINUITY.

By C. Delisle Burns.

The work of William of Ockham on Continuity and Infinite Divisibility does not contain any statements of philosophical importance which are unknown to us now: but it is at least historically interesting, in view of the fact that it was done in the early fourteenth century. And there are interesting parallels to be found between the ideas of Ockham and Mr. Bertrand Russell: sometimes there is even a close likeness between the actual sentences of the ninth question in the first book of Ockham's *Quotlibeta* and those in Mr. Russell's *Our Knowledge of the External World.* I shall attempt to give, without much commentary, a short summary of Ockham's treatment of continuity. The problem for him arises in that of the infinite divisibility of space: but he gives the clearest indications that the conceptions he uses are valid also for time, and he seems to imply that they are valid for all forms of continuity.

Two sentences are specially interesting, that in which Ockham declares it impossible for those who do not admit infinite divisibility to reply to Zeno's argument about Achilles, and that in which he distinguishes "compact series" from "things juxtaposed". The whole of his treatment of continuity is based upon the idea that there is always a third point between any two in a line or that there is not a "certain number" of units in a continuity. In the reply to objections there is a hint at a theory of sense-data in continuous visions which seems important: for Ockham seems to regard the conception of the true continuum (compact series) as a sufficient explanation of change. As for his method, the whole *quæstio* fills six columns of print in the edition of 1491. We must therefore allow for the abruptness and apparent neglect of detailed proof: for we have not here what Ockham would have said in his lectures, but only a summary of his theory. He begins with mathematical proofs of the infinite number of points in a line, and then proceeds to deal with the Achilles argument of Zeno.

Then follow replies to objections. The whole is very abruptly stated and the proofs of his statements are sometimes rather indicated than expressed. In some places the contractions in the text are so obscure that it is uncertain whether we have the exact wording.

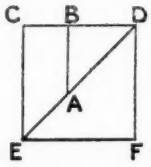
The general result of this *quæstio* will be seen to be in harmony with the realism (in the modern sense of the word) of Ockham's theory of the individual. It has a close connexion with his treatment of " magnitude " in the *De Sacramento Altaris* and his treatment of " the infinite regress " at the beginning of the *Centiloquium Theologicum*. But here I shall attempt only a summary of the *quæstio* in the *Quotlibeta*, " Utrum linea componatur ex punctis ".

After a preliminary indication, in the form of a proof, that the line does consist of points, followed by the remark that Aristotle (VI. Physicorum) is opposed to this opinion, Ockham indicates that the real problem cannot be solved if it is phrased thus. The treatment of Aristotle as an authority may be compared with Ockham's sentence in the *Commentary on the Sentences*—" quicquid de hac re dicit Aristoteles non curo," which gives one an unconventional view of the mediæval treatment of " the philosopher ". There were at least some in the fourteenth century who would not be put off by having a great name quoted against them. As for the problem of line and points, Ockham sees that the real issue is concerned with the sense in which the line may be said to consist or be made up of anything.

He proceeds, therefore: " Here we must first express the true meaning of the problem, which is this: whether any parts of a line are indivisible: and if such be the meaning, I say that *no part of the line is indivisible, nor is any part of any continuum indivisible* ".[1] The point is not, then, a minimum length, or the number of points in a line is infinite. Ockham's words continue thus—" This is proved as follows. If any part were indivisible (or if there were a finite number of points in the line), then the side of a square would be equal to its diagonal; and therefore the diagonal would be commensurable with the side. The consequence is clear; for, from every point in the diagonal a line may be drawn at right angles to the side. This follows from the fact that a line can be drawn from every point in one of the sides at right angles to (every point in) the other side.

[1] Hic primo dandus est intellectus quæstionis, qui est iste: utrum aliquæ partes lineæ sint indivisibiles. Et sic intellecta quæstione, dico quod nulla pars lineæ est indivisibilis, nec etiam pars quæcunque cuiuscunque continui est indivisibilis.

Indeed on the above hypothesis there *is* such (a line). And every such line is drawn through a point in the diagonal. Therefore from every point in the diagonal there is a line at right angles to the side.[1] If, therefore, there are six points in the diagonal there must be six in the side." The conclusion is that there is no indivisible in the line, or that a point is not a minimum length. The proof consists of two parts: (*a*) If the points in CD and EF, opposite sides of a square, are not infinite, then from every one point in CD let a line be drawn at right angles to every point in EF (the number being equal): then ED contains the *same number* of



points. But if it be said that there may be a point A in the diagonal ED through which *no* line from CD to EF passes, then (*b*) let a line AB be drawn at right angles to CD from the point A. If B is *not* a point from which a line has been already drawn to EF, then we have not done what we supposed in (*a*), and if it *is*, then the line AB is the same as one line of the many from CD to EF, since all lines at right angles to CD must be parallel.[2]

Secondly, says Ockham, if points were minimum lengths then "there would be the same number of points in a greater as in a smaller circle. For from any point in the greater circle a straight line may be drawn to the common centre of both. Indeed there *is* such a line, if the hypothesis (of points in the circle) is correct. And these lines do not meet except in the centre. Therefore, either two lines drawn from two points next one another (immediate) in the greater circle will pass through *two* points in the smaller circle or through *one*. If the former, the proposition is proved; for then there

[1] I give the original in case a better translation may make it seem less abrupt. "A quolibet puncto diametri ad costam contingit protrahere rectam lineam. Quod probatur quia a quolibet puncto costæ unius ad quodlibet punctum costæ alterius contingit protrahere rectam lineam. Immo ita esset de facto posita ypotasi. Et quælibet talis linea protrahitur per aliquod punctum diametri. Ergo a quolibet puncto diametri ad costam est aliquis linea recta."

[2] I owe to the assistance of Prof. Percy Nunn my restatement of Ockham, but of course this does not make him responsible for the cumbrous manner I have used.

are as many points in the smaller circle as there are in the greater. If the latter, then these lines never meet again." The last sentence in the Latin is obscure, but that is obviously the meaning. Further proofs are given by increasing the number of concentric circles. The conclusion that the point is not a minimum length, or that the number of points in a line is *infinite*, is stated; and then Ockham remarks: "But it does not follow from the difference of these lines and these circles *in infinity* (of points) that there is no part in the greater which has no distinct part in the smaller corresponding to it".

The problem is then made more general by the introduction of Zeno's argument concerning Achilles, which is abruptly stated as "that the swiftest mover will never catch up the slowest" (argumentum Zenonis secundum quod mobile velocissimum nunquam attingeret mobile tardissimum). "This argument implies certain presuppositions," says Ockham. "The first is that always the nearer part of space is reached before the farther. The second is that *indivisible* space is not reached except in an instant."[1] "From both which it also follows that no body, if it is moved through such space, would reach in one instant anything but one *indivisible* (part of) space. I then argue thus" . . . and there follows the argument that Zeno's proof depends on supposing that there is a one-one correspondence between indivisible units of space and indivisible units of time. "And if you say that it holds also against those who suppose the continuum to be infinitely divisible, I reply: there is no part of space which is *first* reached in the moment, so that any part (of this part) is covered in that moment. And on this supposition Zeno's argument does *not* hold against those who deny indivisibles as it does against those who believe in them. . . . But, of course, I grant that in any instant some distance is covered, and then a part of it was covered before, and a part of that before, and so on *infinitely*: and so the swift overtakes the slow over the same distance by infinite moments." Then comes the abrupt statement—"he who denies indivisibles can solve Zeno's puzzle, and he who supposes indivisibles can not". The positive part of Ockham's thesis ends with the remark that the conception of infinity will solve all problems arising from change.

Next follow replies to objections. These objections are not fully stated, but are left to be implied in the phraseology of the reply. Some are peculiarly mediæval but not, I

[1] Or "the nearer part is *covered*," . . . "indivisible space is *covered*". See text at the end of this article.

think, entirely without modern parallels. They run thus: first, there are indivisibles; for what about the soul? To which Ockham replies: "I am not referring to what is not quantitative". Secondly, it is said that God could make a sphere commensurable with a plane tangential to it. Ockham replies that he could not. Thirdly, against what objection is not quite clear, he says: "We must distinguish the continuum (compact series) from things juxtaposed".[1] Fourthly, it is asked whether the whole is greater than its part; and Ockham replies: "That depends what you mean by greater. For if you mean that the whole contains a certain definite number of parts more than *the* part, it is not true. But if you mean that both part and whole may be infinitely divided and yet may be commensurable, then the whole is (in infinite divisibility) greater than the part." Fifthly, it is said that according to Ockham if God had been dividing from the beginning of the world he would still be at it. Ockham admits the idea and refuses to view it as absurd (non esset adhuc completa divisio). A sixth objection refers to conventional lengths such as a yard, which is obviously frivolous. A seventh refers to the Immaculate Conception of the Virgin Mary, which to modern ears may have little indeed to do with infinite divisibility: but Ockham asserts that she never was in Original Sin in any part of an instant. To an eighth implied objection he replies that God could not make an angel pass from one point to another without passing through infinite points between.

Ninthly, as to sense-data, "as the shape of an object is continuously increased (? by coming nearer and nearer), so the visions of white succeed one another *continuously*, and as we need not suppose indivisible units of change, so we need not suppose indivisible units of vision". That is to say, as I understand him, there is always a sense-datum perceivable between (in time) the first perceived and any other. This is (1) the reply to Bergson's objection against the "cinematograph" idea of vision, and (2) it gives the distinction between the cinema-pictures and actual human vision. For there are *not a certain number* of visions of white or of shapes perceived in change.

Finally, Ockham replies to the general question whether a line consists of points. He says a fallacy is involved in the implied argument: and to this he answers that (1) between the first point and any other there is always a third, but that (2) not *any* point lies between the first and any other (*i.e.* as

[1] Hæc est differentia inter continuum et contiguum quod partes continui faciunt unum per se, partes contigui non.

I understand him,—there is no *second* point in the line, but there is a first).

It is perhaps possible, even from this short *quæstio*, to see why Ockham was known as the "Venerabilis Inceptor". He seems to have had in his philosophy all the prestige of tradition and all the promise of a new beginning.

EXTRACTS FROM THE TEXT OF OCKHAM.

On Zeno :—

. . . Si stat argumentum Zenonis secundum quod mobile velocissimum nunquam attingeret mobile tardissimum. Ista ratio supponit aliqua fundamenta. Unum est quod semper pars propinquior spatii prius attingitur quam remotior. Aliud est quod indivisibile spatium non attingitur nisi in instanti. Ex quibus etiam sequitur quod nullum corpus si moveretur super tale spatium attingeret in instanti nisi unum indiviuum in spatio. Tunc arguo sic: In instanti in quo acquirit tardum unum indivisibile in spatio quæro quid acquirit velox : aut solum unum indivisibile, et tunc velox nunquam attingeret tardum ; aut acquirit duo indivisibilia, et per consequens per secundam suppositionem prius acquirit unum quam aliud, ergo non acquirit in instanti quia in isto non est prius.

Si vero dicis quod istæ passiones velocitas et tarditas non conveniunt motui alicuius indivisibilis, contra idem arguo per omnia, (?) si corpus divisibile moveatur super (?) spatio composito ex indivisibilibus.

Et si dicis quod illud argumentum Zenonis videtur c.te esse ponendo continuum componi ex semper divisibilibus, dico quod in quolibet instanti est mobile in alio et alio spatio, sed non est dare aliquam partem spatii quæ sit primo acquisita in instanti ita quod quælibet eius pars acquiratur in isto instanti. Et si hoc poneretur, non concludet argumentum Zenonis contra negantes indivisibilia sicut contra ponentes. Quod patet quia in illo instanti in quo iam tardum aliquas partes spatii acquisivit secundum (?) se totum, aut velox acquiret aequalem partem, et tunc nunquam attingeret tardum, aut acquiret maiorem, et tunc per suppositionem prius acquirit unam partem illius quam aliam, et per consequens non acquirit in instanti. Et ideo dico quod in instanti non acquiritur aliqua pars nec loci nec alterius formæ per alium modum (?) secundum se totam, ita quod quælibet pars acquiratur in isto instanti. Sed concedo quod in quolibet instanti aliquid acquiritur et tunc pars illius acquisita fuit prius acquisita et pars illius prius et sic in infinitum. Et sic mobile tardum præcedit velox in isto spatio per infinita instantia. Patet manifeste. Unum (?) impossibile est dare aliquid primo acquisitum in instanti per quemcunque modum. Sed quodcunque acquiritur in tempore acquiritur. Et quæcunque pars eius in tempore acquiritur. Et ideo dico quod velox in eodum tempore plures partes eiusdem quantitatis spatii pertransit quam tardum : immo negans indivisibilia potest argumenta Zenonis solvere, et nullo modo ponens ea. Ista solutio est generalis ad omnia argumenta quæ fiunt de formis acquisitis per motum.

Is the whole greater than the part ?

Dico quod hæc propositio totum habet partes plures quam pars potest dupliciter intelligi : uno modo quod pars habeat aliquem certum numerum partium et quod partes totius excedunt in aliqua certa multitudine. Et ille intellectus est falsus : quia implicatur quod totum et pars habeant aliquam certum numerum, quod falsus est. Alio modo quod pars totius habeat partes non tot in aliquo certo numero quam plures, quia infinitas,

et quod totum habeat tot partes et adhuc aliquas alias. Et sic concedo quod totum celum habeat plures partes quam pars.

Sense-data :—

Ad aliud dico quod visiones albedinis sibi succedunt continue, sicut forma continue augetur. Et ita sicut propter motum augmentationis non oportet ponere talia indivisibilia ita nec propter visiones.

General reply :—

Ad principale dico quod solvendum est per fallacia figuræ dictionis : quia hæc est concedenda—inter primum punctum et quodlibet aliud est aliquid punctus medius ; sed hæc est neganda—aliquis punctus est medius inter primum et quodlibet aliud.

V.—DISCUSSIONS.

THE ARGUMENT *A FORTIORI*.

WHENEVER logicians can be induced to think about their science they speedily contrive to show that a logical question has at least as many sides as there are logicians contemplating it. This and the fact that certain deserving sides of their question seem so far to have escaped the notice both of Dr. Mercier and of Mr. Pickard-Cambridge may serve as my apology for participating in the interesting little discussion about the arguments *a fortiori* in which they are engaged.[1] If I am lucky I may not only succeed in illustrating the many-sidedness of logical questions, but also in inducing them to compose their differences, and even in contributing to a more precise use of terms than has hitherto prevailed in Formal Logic.

As the matter stands it appears to me that effective discussion is rendered almost impossible by the vagueness and ambiguity of the notions of 'validity,' 'purpose of the argument,' and 'proof': they mean different things to different writers and are used more or less loosely by all. Let us begin therefore by inquiring how strictly the notion of a valid 'form' is to be taken.

(1) If it is taken quite strictly, the validity of arguments *a fortiori* must certainly be denied. No argument which is not in syllogistic form can be formally valid, and indeed even the syllogism is open to attack on the ground that it is not an adequate example of formal validity. For, as Mr. Alfred Sidgwick has shown, two true premisses validly combined in a syllogistic form may yet conduct to a conclusion which is in fact false, and so defeats the doctrine that a conclusion is necessarily true if it has true premisses and a 'valid' form. Arguments *a fortiori*, may indeed be *true* at any rate, but they cannot possibly be *valid* in the sense that their form guarantees actual truth to their conclusion: when they are true, their truth is 'material' and not 'formal,' *i.e.* it depends on the actual nature of the relation to which the reasoning appeals. This strict logical standpoint should not be overlooked, even though it is not as fashionable as it was and though Dr. Mercier and Mr. Pickard-Cambridge seem to agree in rejecting it.

(2) Both, having thus departed from the narrow path of orthodoxy, apply the term 'validity' to *material* implications. Of these

[1] In No. 96.

there are plenty, if one's standard of 'proof' is not too exacting, and if familiar reasonings based on a knowledge of these relations are therefore said to be 'proved'. Dr. Mercier goes further still. He is willing to allow a reference also to the 'purpose' of the argument, nay to insist on it, and to make 'validity' contingent upon that. To this, however, Mr. Pickard-Cambridge demurs, and he endeavours to show that while dependence upon a 'material' relation should not be held to detract from formal 'validity,' dependence upon purpose should. I venture to doubt whether either position is tenable. To a strict formal logician, if any such survives, both Dr. Mercier's position and Mr. Pickard-Cambridge's would be anathema; but without advocating such an excess of logical asceticism one may well summon both these gentlemen to reflect whether they have not entered on a primrose path of reasoning on which they will not find any logical stopping-place short of a complete denial of the old notion of formal validity.

To render them aware of their danger, it must first be pointed out to them that the illustrations they have been discussing are not real reasonings at all, but merely verbal forms in which various real reasonings may be expressed. In Mr. Russell's terminology, they are 'propositional functions,' to the terms of which values must be assigned, before we can get a judgment which can be true, or false. In my own, they are forms-for-meaning, but as yet their meaning is potential and they actually mean nothing. In the terminology of Formal Logic, they are all 'ambiguous,' and the question of what they *mean* has to be settled before we can say whether they are true or false.

In point of fact it is not very difficult in any of these cases to suggest senses in which the conclusion drawn would be true, and others in which it would be false, although in both cases the premisses *per se* may be true. For example, when we argue *A is greater than B, and B is greater than C ∴ A is greater than C*, it is tacitly assumed that these differences in magnitude are themselves of a sensible magnitude and relevant to the context of the actual argument. But if A were only microscopically larger than B and B than C, and if these differences were negligible, it would not actually be true that A was *greater* than C. For the purpose in hand it would be truer to say that A was *equal* to C.[1] Again there are many contexts in which the adage *πλέον ἥμισυ παντός* holds, and the half is greater than the whole. It is more *e.g.* to offer a woman your hand than your arm. Allowing therefore for the possibility of uses in which the conclusion 'A is greater than C' is false, though its premisses are separately and for other purposes true, how can one properly maintain that the

[1] We should probably say they were 'practically' equal, and so illustrate a 'theoretical' use of 'practical' which may be brought, respectfully, to the notice of those who insist on having an absolute chasm between 'theory' and 'practice'.

conclusion is necessarily drawn from the premisses? Surely the form of the reasoning is not as such either valid or invalid, though it admits both of the truth and of the falsity of the conclusions drawn in different contexts.[1]

What then is the difference between the 'valid' and the 'invalid' forms? Chiefly that in the former case we are more prone to think of uses in which the conclusion as stated is true, while in the latter we think more readily of cases in which the conclusion is false, and find it harder to conceive the conditions under which it would correctly follow. But this difference is surely psychological and not logical, and it is quite possible to imagine conditions in which 'valid' inferences could be drawn from what would ordinarily be called 'invalid' forms.

Let us examine therefore the specimens of forms which Mr. Pickard-Cambridge regards as inherently 'invalid'; we shall find that they yield valid enough conclusions in certain cases. If in 'A is next to B and B is next to C' we presuppose the ordinary reference to lateral proximity we cannot indeed infer that 'A is next to C'; but we can successfully infer that 'A is next but one to C,' as Dr. Mercier contends. Nor is it clear how Mr. Pickard-Cambridge can deny the 'validity' of this inference. For it follows from the (material) relation of the spatial 'universal' assumed, and neither he nor Dr. Mercier has argued that the relation must be syllogistic. But of course the premisses need not assume this universal nor aim at describing a laterally linear relation, and, as Mr. Shelton pointed out (p. 528), 'next' is ambiguous, and if we are putting marbles together we may arrange them triangularly, so that the conclusion 'A is next to C' is true, because 'A is next to B and B is next to C'. Or again, from the point of view of a popular actress contemplating from the stage three of her admirers in the stalls, it may be quite natural to describe them as sitting 'C by himself in the front row, with A and B next (behind) him'. 'Nextness' would then be determined in the line of sight. Similarly I would proffer as a valid inference in the form 'A cheats B, B cheats C ∴ A cheats C,' 'the Armenian cheats the Jew, the Jew cheats the Scotchman, so of course the Armenian cheats the Scotchman'; this seems fully as 'valid' as any of these arguments *a fortiori*.

We get then this result: the general 'validity' of a form is no protection against the falsity of a conclusion drawn in it in special cases, the general invalidity of a form is no bar to the 'validity' of a conclusion drawn in it in special cases. There is no 'necessary connexion' therefore between validity of form and actual truth. This result is surely utterly subversive of the whole traditional 'ideal' of a 'valid form,' and no one who retains any respect for

[1] I have elsewhere shown that the syllogistic form itself appears to suffer from the same defect. Cf. my article in No. 89 on *Aristotle's Refutation of Aristotelian Logic* and *Formal Logic*, ch. xvi. §§ 7-10.

this ideal should endure the aspersion cast upon it without making the most strenuous efforts to rehabilitate it. For is not validity of form explained as a logical *mirage*, thrown by unperceived 'material' truth upon the reflecting surface of language?

But if we give up 'validity,' on what shall we say that actual truth depends? Dr. Mercier's suggestion that the 'purpose' of the argument has much to do with it certainly deserves consideration, especially as Mr. Pickard-Cambridge's objections do not seem to dispose of it. Mr. Pickard-Cambridge is confident (p. 537) that "whether your inference about certain relations follows or does not follow from the premisses cannot depend upon your object in attempting to draw it, or in starting the inquiry. It depends upon a difference between the relations themselves." The examples given above may I hope abate a little Mr. Pickard-Cambridge's confidence. For in all these cases the 'validity' of the reasoning certainly does seem to be intimately related to the object, aim, or purpose of the argument. If we aim at microscopic exactness, differences in the size of A, B and C become relevant which are negligible when a rough estimate will suffice. The reasoning about the 'next-ness' of A, B and C depends on how mathematically or colloquially we are purposing to conceive the notion of 'next,' and similarly that about 'cheating' depends on the context in which the term occurs.

Mr. Pickard-Cambridge also seems to labour under a certain misapprehension of the position he attacks. He supposes it to be implied that if 'validity' depends on the purpose of the argument "we are *entitled* to neglect the difference between the kinds of relation referred to and to look *only* to the purpose, *assured* that in any argument whose purpose is *parallel* to that of an argument which we already know to be valid, it will be valid to draw a parallel conclusion. But this expectation, of course, breaks down at once." Here I have ventured to italicise the terms which seem open to exception. The insertion of the word 'entitled' begs the question in dispute by again slipping in a reference to the ideal of a purely 'formal' validity which the reference to the purpose of the argument has implicitly repudiated. For in strictness it cannot be contended that the neglect of *any* difference can ever be a 'valid' process to which the logician is 'entitled'. It always has to be done, of course, in real reasoning, but it always involves a *risk*. What we neglected as irrelevant may always turn out to have been relevant and so may wreck our inference. Hence we can never be 'assured' in advance, when we embark on an argument, that it will bring us safely to port. In real reasoning, nothing venture, nothing have; the hope of truth is ever bound up with the risk of error. Again I can see no reason why Dr. Mercier should accept the '*only*' Mr. Pickard-Cambridge has *added* to his position. It is quite possible to think a knowledge of the purpose 'essential' to the knowledge of the value of an argument without assuming that this knowledge is all-sufficient. It may be part of

the 'essence' without being the whole of it. Lastly, the term 'parallel' seems to involve a metaphor the purport of which is obscure. In (Euclidean) geometry certain lines are said to be 'parallel' when they can be produced ever so far either way and yet never meet. But it can hardly be *this* property of parallels that Mr. Pickard-Cambridge wishes to indicate when he attributes 'parallelism' to arguments.

Having in these respects defended Dr. Mercier against Mr. Pickard-Cambridge's strictures, candour compels me to add that his phraseology does not seem to me to be altogether unexceptionable. His conception of 'validity' is not of course as formal as Mr. Pickard-Cambridge's, just as the latter's is not as formal as that of the strict formal logician, but still it seems doubtful whether he would admit that his phrase 'the purpose of the argument' stands in need of further definition. This purpose is of course a very real fact, though the old logic has ignored it; it becomes a perfectly definite thing whenever a form of words is *used*. It has to be ascertained before the *truth* of a proposition can be discussed, because it has to be ascertained before its *meaning* can be understood. But it may vary (within pretty wide limits) in the various cases of the use of the same form. The mere words of the reasoning therefore cannot be said to reveal '*the*' purpose of the argument, or indeed any of the many purposes to which they may minister. If it was judicious to refer to so important a point so briefly (which I doubt), Dr. Mercier's formula should at least have run 'for a purpose of the argument'.[1] That will not at any rate delude the logician into thinking that a 'form' can have only one meaning and can serve only one purpose, and that he need not trouble to ascertain what is the actual meaning of the 'judgments' he sets out to evaluate.

Lastly I would suggest, certainly to Dr. Mercier, and (with some trepidation) also to Mr. Pickard-Cambridge, that when they talk of 'validity' they really mean 'value'. But the topic of Value is still, alas, a *terra incognita* for logic, and indeed largely for all philosophy.

[1] I now see that in his reply in No. 97 Dr. Mercier has gone more fully into the logical importance of the purpose of the argument (pp. 87-89), and cordially agree with his account of this.

F. C. S. SCHILLER.

THE *A FORTIORI* ARGUMENT.

IN MIND, No. 92, page 567, Dr. Mercier challenges Mr. Shelton to express the *a fortiori* argument syllogistically, and in No. 93, page 78, Mr. Shelton answers this challenge. He there—following a suggestion of mine [1]—takes the two statements, 'A is greater than B,' and 'B is greater than C,' as together expressing the minor premiss of the argument as given, and he supplies a major premiss which in conjunction with this minor guarantees the truth of the conclusion, 'A is greater than C'. Are there any philosophical reasons why this solution should be considered unsatisfactory?

If Dr. Mercier has any such reasons it seems a pity that he should obscure them by making so much play with irrelevant remarks. What philosophical weight can there be in literary objections to the form in which the missing major premiss happens to be expressed? We may all agree that the hypothetical form preferred by Dr. Mercier ("If A is greater than B, and B than C, then A is greater than C") is neater and less unnatural than the one to which we are committed when the problem is to translate the given argument into a 'categorical syllogism'. But what possible relevance can such literary criticism have? To call Mr. Shelton's major premiss a "concocted universal" is only to call it what it professes to be, while to say that it is "painfully and laboriously concocted" is neither relevant nor true. It may very well seem to the literary critic a "monstrosity" and "a stupid, cumbrous, complicated, ridiculous form"; and it may even deserve some of these abusive epithets; but if it is philosophically unobjectionable what more need the logician demand of it? When Dr. Mercier asked to have a naturally expressed argument translated into syllogistic form, why should he be surprised if the expression becomes unnatural? The more acquaintance we have with the defects of Formal Logic the less room is there for this surprise. If, for instance, Formal Logic were able to recognise that every major premiss, as such, is a hypothetical in meaning even when

[1] I have no idea who first applied this method. Dr. Mercier calls it "an old device of Jevons's," but in the four logical books of Jevons's which I possess—the *Principles of Science*, the *Substitution of Similars*, the little *Primer*, and the *Elementary Lessons*, I have not yet been able to find anything about the *a fortiori* argument, except a bare definition of it in the last-named. Perhaps Dr. Mercier can supply a reference?

not so in form, there would be no object in using a clumsy 'categorical' form to fill up this gap in the argument.

An equally serious irrelevance is the assumption that because the reasons for the *a fortiori* conclusion are given in the form of *two* propositions, and because there is a B in both (which looks like a middle term), therefore they are "the premisses". The question raised by Mr. Shelton is whether they do or do not together constitute the minor premiss only. We cannot solve this question by assuming its answer beforehand.

Irrelevant also, because ambiguous, are the questions whether we do or do not "reach a conclusion through a universal," and whether "every argument must contain a universal". In answering them we need first to distinguish between reaching a new judgment and supporting a proposed conclusion. The fact that these two operations are in actual reasoning often—if not always—entangled need not prevent our agreeing that in the former operation, considered abstractly, the reference to a universal may often be absent. But it is the latter operation only with which we are here concerned. Given certain reasons ('A is greater than B, and B than C') for a conclusion ('A is greater than C'), what further assumption is required to make those reasons cogent? Similarly the question whether every argument must contain a universal may be taken in meanings so different that, until further explanations are given, it cannot be answered either Yes or No. If it asks whether every form of words that can be called an argument is syllogistic, not even a formal logician would answer Yes; nor again if it asks whether every argument as expressed in ordinary life has both its premisses openly stated. And if it asks whether every universal judgment requires a wider universal to support it, why should anyone demand this support in the case of a universal which seems to him axiomatic? On the other hand, if it asks whether the giving of a fact as evidence for a conclusion implies a belief in some universal, is there anyone who would seriously answer No? I should prefer to say that not one universal but many are often thus implied in (what is commonly called) a single argument, since every detail in a fact gets its evidentiary value from our belief in rules under which such details may be brought. The formal logician's habit of assuming that it is easy to distinguish, in actual reasoning, between a single argument and a cluster of arguments, or between a single 'proposition' and a cluster of propositions, is one of several causes of the ambiguity of the question. Another may be found in the habit of trying to get a single formula which shall apply equally to arguments from facts and to arguments which are only an interpretation of words; in the latter the process is normally independent of our knowledge of natural uniformities, and consists in substituting one equivalent term for another—such equivalence being often limited, as Dr. Mercier says, to a particular purpose in view. When we define

a syllogism as the application of a general rule to a particular case it may be held that verbal substitutions of this kind are not necessarily syllogistic. Call them 'arguments' by all means, if we like, but let us recognise also that they are arguments about the meaning of a given statement, rather than about the inference to be drawn from given facts.

Another question is suggested by Dr. Mercier's contention (MIND, No. 97, p. 84) that the concocted universal[1] *means exactly the same* as the argument, 'A is greater than B; B is greater than C; therefore A is greater than C'. No doubt it means the same as the hypothetical 'If A is greater than B, and B than C, then A is greater than C'. But is there no difference between asserting that a conclusion *is* proved by the facts as given, and asserting that it *would be* proved if those facts should be found true? Every general rule asserts that *if* a case of it should be presented to us such and such a conclusion would be inferrible, but the assertion stops short of saying 'Here *is* a case, and therefore the conclusion may here and now be drawn!'

One can understand how a formal logician might be led to ignore this difference. Take the case of the hypothetical 'If all M are P, and S is M, then S is P'. He might maintain that this means exactly the same as an argument in *Barbara*. Since the 'validity' of *Barbara* is not affected by the truth or untruth of the premisses, it may seem to him that it does not matter whether we *assert* their truth (and that of the conclusion) or not. If so, I would submit that this is an instance where the formal logician's pre-occupation with validity rather than with value leads him to ignore a difference which is better not ignored—namely between professing to put forward facts sufficient to prove an asserted conclusion and merely stating conditions which, if fulfilled, would be sufficient to prove it. In the latter operation no pretence of actual proof is made, and where the statement is axiomatic nothing disputable is said, and no risk of error taken.

Dr. Mercier, I believe, agrees with Dr. Schiller and me that most of the traditional logic is trivial and silly. That amount of agreement encourages me to ask whether he has any objection—other than literary—to make against the concoction of a universal for the limited purpose here suggested. The suggestion is that, when we have a fact or facts asserted as sufficient to prove a conclusion, two questions arise before a sound decision can be reached. One is the question whether such facts are true; and the other is whether, if true, they are sufficient for proof. Where a complete syllogism is set out—as seldom happens in serious reasoning nowadays—these questions refer respectively to the truth of the minor and the major premiss. But where facts only are asserted as

[1] "All cases where, of three things, the first is greater than the second, and the second greater than the third, are cases where the first is greater than the third."

reasons, and their sufficiency is left to be assumed, it is often worth while to express this assumption in the form of a concocted universal in order to see whether the arguer is prepared to defend it in its full extent or not. His failure to do so impairs the sufficiency of his reasons. And where, as in the given example of the *a fortiori* argument, the implied assumption is axiomatic and therefore not likely to be doubted, its statement in words is not likely in everyday life to be asked for. Nevertheless it can be given, on demand. Suppose the argument had been 'BA and AC are two sides of a triangle; therefore the line BAC is longer than BC'. Would the comparative neatness of the expression, 'Any two sides of a triangle are together longer than the third,' reconcile Dr. Mercier to this manner of expressing the argument syllogistically? I submit that, so long as the concocted universal has an intelligible meaning, any literary defects in it are without logical importance.

ALFRED SIDGWICK.

THE NATURE AND GEOMETRY OF SPACE.

I HAVE to thank Mr. Turner for his courteous criticisms on my article about "Space". But they appear to me to rest mainly on misunderstandings of the position that I was trying to maintain and on a failure to notice certain distinctions and definitions which I laid down. Mr. Turner also argues from some premises which seem to me to be false. It will therefore be worth while to make a short reply in the hope of reaching a better understanding. In quoting Mr. Turner's criticisms I will refer to them as T. and give the page in MIND No. 98 from which the quotation is made.

(1) 'It would seem to follow that each "private" space must contain its own "private" matter; we cannot restrict this "privacy" . . . to space . . .' (T. 223). . . . 'Mr. Broad . . . later qualifies his position by the assertion that we do not know whether such (private perceptual) spaces be possible.' (T. 224.) My position, which I thought I made clear in the article, is this: (*a*) *If* there be genuine private spaces there will be private matter in them. (*b*) If there be physical space and physical matter then the physical matter is not in any private space. (*c*) The reason why it is doubtful whether there are private spaces with private matter is not that the *privacy* of our sense-data seems doubtful nor that it is doubtful that our sense-data stand in *spatial* relations to each other. The question is whether a private world consisting of sense-data in spatial relations can also be regarded as a space containing matter, when we define the difference between space and matter as I define it in the article. It is curious that Mr. Turner never explicitly mentions the distinction which I laid down between space and matter and tried to defend; indeed it is clear by implication that he ignores it and takes a different distinction which I do not accept. Thus he argues that material unextended points are impossible because *material* and *unextended* exclude each other by definition (T. 227). Now they may exclude each other on Mr. Turner's definition, but they do not do so on mine. On my definition geometrical points stand in timeless spatial relations to each other; whilst material points stand in spatial relations which may alter, and these relations are themselves dependent upon two others—(*a*) the relation of being *at* a geometrical point at a certain moment and (*b*) that of two geometrical points to each other. With this definition there is no objection to material unextended points.

Mr. Turner's real objection to unextended material points is no

doubt contained in his footnote (T. 228) where he asks: 'Can a selection of unextended points be an extended straight line?' I should reply: Most certainly. A straight line *is* a series of unextended points ordered by a certain relation. Similarly an extended bit of matter can be regarded as a set of unextended material points ordered by certain relations. I do not think that any one acquainted with the modern mathematical theory of the continuum will quarrel with these views.

(2) . . . 'What grounds do we possess for our knowledge that this space, which *I* add to *my* experience is identical with the space that you (and others) add to your (and their) experience? Why, if perceptual spaces are private, should not thought-constructed spaces be private also' (T. 224). I argued in my paper that physical space was constructed to deal, not merely with *my* sense-data, but with all the sense-data of all normal waking persons. Assuming that it is possible for us to communicate with other people and to learn about their experiences there is nothing impossible in such a construction. And if it be possible at all it will naturally not be private to any one person. I did not indeed deal with the limitations and implications of intersubjective intercourse, but I would point out that exactly the same problem would arise for Mr. Turner. He rejects what he calls 'private space theories' and prefers the view that 'all appearance is partial reality' (T. 223. See especially note 4). How far this view is incompatible with 'private space theories' I could not undertake to say unless I knew much more accurately than I do in what sense Mr. Turner interprets it and them. But, at any rate, Mr. Turner has to 'supplement' his appearances 'from regions outside themselves'. He can only learn about the latter from descriptions given by other people, and so any difficulty about the reliability of intersubjective intercourse and the possibility of thought being as private as sensation affects him as much as it affects me. I may as well at once reply to 'the popular opinion that our "thoughts" are essentially private' (T. 224. Note 7) which Mr. Turner considers important in this connexion. My thought of the number 2 is an event in my mind with a certain place in my history; it differs from Mr. Turner's thought of the number 2 which is an event in his mind. Both these thoughts are thus private. But their object, the number 2, is not private. Similarly physical space is not private, though my act of thinking about space is private to me and Mr. Turner's act of thinking about space is private to him.

(3) I never denied for a moment, as Mr. Turner seems to think (T. 225), that 'the content of perception (spatial relations) and the object of thought (space) have some common [1] real element'. Nor

[1] I do not understand the force of the word *real* here. If Mr. Turner means that there must be particular existent parts common to private and physical space I disagree. But this is not necessary in order that the adjective *spatial* may reasonably be applied to both.

did I suggest for an instant that what we perceive is spatial *relations* and nothing else, and that physical space does not involve spatial relations. What we perceive at any moment with any sense is a complex whole in which we can distinguish on analysis extended terms and spatial relations. These relations have certain logical properties and are the clue to all that we assert about physical space. The logical properties that we ascribe to the relations of points in physical space are not indeed *identical* with those which are possessed by the relations which we find in the object of sense-perception; if they were physical space would not do the work for which it is constructed, *viz.* the correlation of *all* sense-data in *all* normal waking people. But there is enough analogy to make it perfectly reasonable to call both kinds of relation spatial. And, since in my view the points, lines, etc., of physical space are expressly constructed to deal with sense-data and their relations, I cannot see much relevance in Mr. Turner's remark (T. 226) that 'unless these definitive terms have some reference ultimately to the content of perceptual experience, they become wholly void of meaning'.

(4) It remains for me to notice an argument of Mr. Turner's which I do not profess to understand. He says (T. 225) that if we treat space as I treated it in my article 'we must logically take the same view of force, time, mass, truth, duty, and every other ultimate scientific and moral concept alike'. This, Mr. Turner thinks, is a 'serious dilemma'. I can only reply by proposing the following dilemma to him. Either duty, truth, etc., are very much like space or they are not. If they are there can be no *objection* to treating them in the same way as space, and if they are not there can be no *need* to treat them in the same way as space.

C. D. Broad.

VI.—CRITICAL NOTICES.

(1) *A Course of Pure Mathematics.* By G. H. Hardy. Cambridge University Press, 1908. Pp. xvi, 428. Cloth, 12s. net.

(2) *A Course of Pure Mathematics.* By G. H. Hardy. Second edition. Cambridge University Press, 1914. Pp. xii, 443. Cloth, 12s. net.

(3) *A Course of Modern Analysis :* An Introduction to the General Theory of Infinite Processes and of Analytic Functions; with an Account of the Principal Transcendental Functions. By E. T. Whittaker. Cambridge University Press, 1902. Pp. xvi, 378. Cloth, 12s. 6d. net.

(4) *A Course of Modern Analysis :* An Introduction to the General Theory of Infinite Processes and of Analytic Functions; with an Account of the Principal Transcendental Functions. Second edition, completely revised. By E. T. Whittaker and G. N. Watson. Cambridge University Press, 1915. Pp. viii, 560. Cloth, 18s. net.

It is tolerably well known that, especially during the last fifty years, there has been in mathematics a growing tendency towards a logical treatment of conceptions and a logical deduction of theorems. This is due to the growth of branches of mathematics, such as the theory of aggregates, which are concerned with very much the same things as modern logic as developed by Leibniz, Boole, De Morgan, Frege, Peano, Russell, and Whitehead. One of the results of this mathematico-logical *rapprochement* is that the number of people who are interested in both logic and mathematics is now fairly large; and this is very striking when we reflect that there was hardly a single logician among the mathematicians of Great Britain between the times of John Wallis and Augustus De Morgan. Nowadays, mathematics would hardly be put to shame by another Bishop Berkeley, and probably the only place in Britain where logic and mathematics are still held to be separate sciences is the city of lost causes.

Another result is that some mathematicians have become much more strict in their expositions. In what follows, I will try to give a fairly exhaustive examination of the changes which the last ten years or so have brought about in successive editions of two

well-known mathematical text-books in use at Cambridge. This will suggest some reflections on the question as to whether or not teaching should be guided by what may seem to be the spirit of logic into paths which differ from the historical ones that alone seem to lead to great and lasting work. It is a truism that history is irrelevant to logic, that the truth or falsity of a proposition is independent of the way in which so and so discovered it, but it seems as great a mistake to banish from teaching a discussion of the growth of ideas as to try to build a house without scaffolding on the ground that the scaffolding is not a part of the building.

Mr. Hardy's book, as the Preface tells us, was 'designed primarily for the use of first-year students at the Universities whose abilities reach or approach something like what is usually described as "scholarship standard,"' and it is this class whose wants he has considered first: it is in any case a book for mathematicians. This is still more the case in the second edition: whereas in the first edition a great use is made of geometrical intuition instead of strict logical proof, in the second edition the logical aspect of mathematical analysis is treated at far greater length. It is undoubtedly the case that the first edition offered fewer difficulties to a student, but it cannot be denied that the changes in the second edition have made the book far more useful to mathematicians. In it hints are given to enable a student to omit any parts in which a logical argument is too subtle for him, and a particular merit is that the fact that there are logical difficulties is quite clearly explained. Mr. Hardy seems free from any tendency to insert notes mentioning that there is a difficulty which do not say what it is; this process is not unknown among unpractised teachers, and only succeeds in quite pointlessly puzzling, irritating, or even boring a student.

In both editions some knowledge of integers and fractions is assumed, and it is roundly stated that 'the notion of a rational number obviously includes as a particular case that of an integer, since any integer may be expressed as a fraction whose denominator is unity'. Mr. Hardy is, of course, wise, from a teacher's point of view, in hiding completely from the student that the rational number 2 : 1 is something of quite another nature from the integer 2. Only in the second edition does an analogous case for *real* numbers come up for discussion. In the second edition are added to Chapter I. a sketch of Dedekind's theory of real numbers and a proof of Weierstrass's theorem about points of condensation. In the first edition the chapter to which these additions are made was solely concerned with the representation of rational numbers by points on a straight line, the reasons which lead us to believe in the existence of irrational points and in corresponding 'irrational numbers,' and theorems on quadratic surds and real numbers in general. 'I have not attempted,' said Mr. Hardy in the Preface (pp. v-vi) to this edition, 'to include any account of any purely

arithmetical theory of irrational number, since I believe all such theories to be entirely unsuitable for elementary teaching. My aim in this chapter is a more modest one: I take the "linear continuum" for granted and assume the existence of a definite number corresponding to each of its points; and all that I attempt to do is to analyse and distinguish the various classes of numbers whose existence these assumptions involve' (*cf.* note on p. 10 of the second edition). In the second edition a more abstract discussion is added and the author says (p. 13): 'When we have substituted sections of rational numbers for the rational numbers themselves, we are almost forced to a generalisation of our number system,' and defines a real number as a segment.

Let us consider what we mean when we speak of the 'generalisation of number'. It was not the case that mathematicians, finding that they could not subtract 3 from 2, for instance, were led to devise a new class of 'numbers' which would allow them to subtract the greater from the less. 'Negative numbers' seemed to have first appeared in algebra because of the observation that if we have a large number of positive and negative terms, we may for convenience add together the negative ones as if they stood for numbers. Then analytic geometry showed how these signs of which the signification was not at first definitely known meant something almost visible in applications of algebra to geometry. The perception that negative numbers were useful satisfied mathematicians for hundreds of years, and it was only comparatively lately that they saw clearly that 'negative numbers' were not numbers at all but operations. If mathematicians had really followed the maxim of inventing results where results in the ordinary way are impossible, they would certainly have extended the number system so as to enable them to sum divergent series in ordinary analysis. Thus we can hardly agree with Mr. Hardy when he says on p. 7 of the second edition that such facts as that $x^3 = 2$ has no rational roots are 'plainly sufficient to make some generalisation of the idea of number desirable, if it should prove to be possible'. This is an example of what we so often come across in text-books: logical rigour is thought (correctly) to be unsuitable for a very youthful student, and so the writer of the book substitutes for an account of the nature of something or other an account of how he thinks that the something might have been discovered but was not. Often such suppositions are very unnatural. Again, though nobody can deny that the historical development is natural, yet some writers dimly see that history alone does not tell us about the nature of the subject, and combine more or less historical exposition with more or less logical notes. We shall have an example of this later on.

I cannot think that it would be at all a natural thing to assume that rational numbers should be replaced by segments of rational numbers before irrational numbers are introduced as segments.

Certainly if this were the case an extension would be immediately suggested; but as a matter of fact it was questions of existence that suggested that irrational numbers should be defined as segments, and only then did it seem good to define rational numbers as segments also.

One of the great merits of Mr. Hardy's book is (pp. 18-19 of the first edition and pp. 26-27 of the second) the excellent discussion of what is meant by a 'variable,' which should be a more puzzling notion to a beginner than it is. The remarks on finite and infinite classes (pp. 110-111 of the first edition and p. 108 of the second) should be read with this discussion. By the way, as an example of a class, the first edition had 'red-headed Germans' while the second edition substituted 'members of Parliament'. I dare not express an opinion as to whether and in what way this substitution is connected with the war, any more than I dare about the substitution of 'the Emperor of Russia' for 'the Emperor of China' in the last edition of Mr. Russell's *Problems of Philosophy* (pp. 70, 116).

In Mr. Hardy's third chapter complex numbers are introduced as correspondents of displacements in a plane, and this introduction is practically the same in both editions. The discussion of what we are to mean by 'multiplication of displacements' is also practically unchanged in the two editions (pp. 72-75 and 75-78 respectively), and is quite admirable. It seems indeed that there is a good case to be made out for this geometrical introduction of complex numbers in teaching as opposed to the historical method. There is a notable deviation from logical method in the re-definition of equality for complex numbers (p. 75 of the first edition or p. 78 of the second). In the second edition there is on p. 125 a note on the ambiguity of the word 'obvious'.

In the fourth Chapter we come across the question of the existence of a limit. Considering that in the second edition so much was added on the strict theory of real numbers, it is somewhat disappointing to find that the comparison theorem of convergent series is dismissed as shortly as it was on p. 145 of the first edition (see p. 143 of the second edition). Of course the point of this theorem is one which people who rely on geometrical intuition are likely to overlook, and it would seem advisable to press it home to those who wish to become mathematicians. I cannot help feeling that the necessity for proving the existence of a limit appears most clearly—as it did historically—when we consider the advantages of defining an integral as the limit of a sum (*cf.* p. 219 of the first edition and p. 228 of the second). To the fourth chapter are added in the second edition (pp. 149-153) sections on the 'limits of indetermination of a bounded function,' the 'upper and lower bounds of a bounded function,' the 'general principle of convergence' for a bounded function, and so on.

The additions to the fifth chapter in the second edition are

extremely important. The conception of 'uniformity' is brought in for the first time (*cf.* p. 8 of the first edition) and the Heine-Borel theorem is proved and applied to continuous functions on pp. 185-190, while pp. 191-194 are on the existence proof of implicit and inverse functions. It has been more and more recognised that some of the most important theorems of mathematical analysis use this notion of 'uniformity'. We shall shortly have occasion to notice that the proof of Cauchy's theorem on complex integration depends, in its simplest known form, on this conception. I think we may almost say that the most striking of the reforms introduced into mathematics by a stricter logic is the use and abstention from neglect of this conception.

To the seventh chapter an interesting note on the rigorous introduction and treatment of differentials is added (pp. 280-281). This concluded the list of changes in the second edition which are of the greatest logical interest. I think it is true that, both in the case of Mr. Hardy's book and the book to be reviewed next, that the most valuable effect of the advance of logic in mathematical thought is the adequate treatment of the principles on which questions relating to uniformity depend.

For teaching purposes it would seem advisable still to use the first edition for an elementary course, and to use the second edition as a stepping-stone to the theory of analytic functions. Every page breathes Mr. Hardy's supreme competence as teacher and mathematician. That he considers it advisable to use modern logic in teaching mathematics is one of the strongest arguments there is for inverting historical order in a course of mathematics.

There is a great contrast between the first and second editions of Prof. Whittaker's work: in the second edition Mr. Watson's collaboration has apparently affected not only the second half of the book, but also the fundamental and logical aspects. The second half in the second edition is quite the best of its kind in the English language; but we are mainly concerned here with the first half of the book, which concerns, according to the first edition (p. 7), 'those methods and processes of higher mathematical analysis which seem to be of greatest importance at the present time'. It is in this part that the second edition shows traces of the enormously important modern work on exact treatment of the subject-matter of analysis. It is not possible to say with precision whether any particular alteration is due to Prof. Whittaker or to Mr. Watson, but it is possible to make more or less plausible guesses based on a reading of Mr. Watson's very useful Cambridge Tract on *Complex Integration and Cauchy's Theorem* (Cambridge University Press, 1914).

In the first place the use of Peano's decimal system of numbering paragraphs is adopted throughout the whole second edition, and we suspect that this is a sign that the work of the logical school of mathematicians at Cambridge has left its mark on

the book. This supposition is strengthened by the reference (p. 10 of the second edition) to Whitehead and Russell's *Principia Mathematica* for fuller information on the logical foundations of the theory of number. It will seem to many students rather unnecessary to refer to this work in a chapter presumably intended to introduce them to a subject on which they are to be examined, and consequently which they need not examine at all deeply. A better argument is that one does not mention electrons at the beginning of a course on electricity. In a sentence added to the second edition we read (p. 3), that 'it is not part of the scheme of this work to discuss the construction of the class of integers or the logical foundations of the theory of rational numbers'. It would have been far better to allow this statement extended to real and complex numbers to replace the first chapter altogether; for surely it can serve no possible useful purpose to 'introduce,' as it is called in both editions, the various numbers of analysis in a fashion which is not stimulating to the learner, is unsatisfactory to the logician, and is garnished (in the second edition) with notes intended to pacify logicians or the logical conscience of the teacher but which must be quite incomprehensible to any learner. It is a pity that the authors allowed their decision 'to make the book complete in itself' (p. 5 of the second edition) to be the outcome of their consideration of the desirability of omitting the first four chapters in view of the appearance of Mr. Hardy's book. In the first paragraph of the first edition (p. 3) we read that 'positive integers . . . are inadequate to express all the quantities occurring in calculations; and so the primitive number system has come to be enlarged'. In the second edition there is a note to the word 'positive' which runs: 'Strictly speaking, a more appropriate epithet would be, not *positive*, but *signless*'. Then it is stated that 'the operations of subtraction and division could only be performed among them subject to inconvenient restrictions; and consequently, in elementary arithmetic, classes of numbers are constructed such that the operations of subtraction and division can always be performed among them'. I cannot imagine a much more unnecessary piece of information: it is partly false, wholly useless to a beginner, and wholly irrelevant to a logician. In both editions, various 'numbers' are apparently thought to be 'introduced' when only the vaguest information is given about them, and, in the second edition, it is even thought to be relevant to mention the symbols which denote some of these numbers, and which happen to be used to denote also—though this is not mentioned—other numbers of other classes. This idea of 'introduction' can only be compared to a fictitious social event. It is as though one were asked to dinner to meet a Mr. Jones and some other people; on arrival one were told by one's host, with a vague wave of his hand towards a dark room, that the inhabitant of that room was Mr. Jones; and a voice were to come

from the room: 'I *think* our host was pointing at me, but my name is not Jones'.

To the second edition is added a great deal (pp. 4-6) on irrational numbers and Dedekind's theory. It is fairly well known that Dedekind thought that he could 'create' a number 'defined by' one of his segments, and that Russell made the great advance of defining that the number to be defined actually *is* the segment. Russell thus consciously acted in conformity with what is called 'Ockham's razor'. Russell's definition is mentioned in the third note on p. 5, but no information is given as to why such a definition was made, and a learner is confused by the logically correct distinction between a *rational* and a *rational-real* number (pp. 5, 6). So long as text-books insist on trying to combine a more or less historical method of teaching a subject with footnotes giving hints about subsequent logical work, to still the protests of conscience, so long will the puzzled student be led along apparently arbitrary paths with the constant stream of what seem to him incomprehensible irrelevances sounding in his ears. It is a lack of imagination in a teacher not to divine the difficulties of a learner, and also to attribute to a learner something of the sensitive logical conscience which teachers doubtless possess owing to their reading about modern investigations.

Whereas in the first edition, complex numbers were hurried in by the words: 'To express the result of this and similar operations [the extraction of the square root of a negative number], we make use of a new number, denoted by the letter i; this is defined as a quantity which' satisfies certain laws. Of course it is obvious that this is no attempt even at an 'introduction' in the authors' sense. In the second edition, however, complex numbers are defined in quite the fashionable way as pairs of real numbers, and a very modern spirit is shown by the fact that equality is not redefined for complex numbers. But it is rather unsatisfactory to read (p. 7) that 'we are at liberty to define the product of two number-pairs in any convenient manner; but the only definition which does not give rise to results that are merely trivial is that symbolised' . . . and so on. It is hardly fair to a student to expect him to know what the authors consider trivial. It would have been far better simply to have omitted this and to have referred to Mr. Hardy's excellent treatment of the subject.

The question of the existence of limits is much more thoroughly treated in the second edition than in the first (*cf.* p. 10 of the first edition and pp. 13, 14, 20 of the second). But one or two historical remarks may be made on the second edition; in the first note on p. 13 the theorem known as the 'Bolzano-Weierstrass theorem' is said to be proved by Bolzano in 1851. In Bolzano's posthumous book of 1851 the theorem is not touched upon; in a paper of 1817 the method used by Weierstrass and others was given. The theorem in the last paragraph on the same page is

stated (by a word added to the second edition) to be Cauchy's, and Bolzano's earlier claims are ignored, as they are also in the historical note on p. 16.

What Prof. Whittaker called 'the popular idea of continuity' of a function on p. 41 of the first edition is again discussed on p. 42 of the second; and we have again an examination of the question 'how far this popular definition is equivalent to the precise definition given above'. These words might lead one to believe the contrary to the fact that what is called the 'popular definition' never held an important place either in mathematics or in popular ideas of it. The one definition is not any more *precise* than the other: all we can say is that what Prof. Whittaker calls the 'precise definition' gives a name to an idea which seems to have more useful applications than the other.

Curves were not considered in detail in the first edition; in the second they are considered more at length (pp. 43, 77), but not nearly so carefully as in Mr. Watson's Tract referred to above. This is not intended to be a reproach; as we know, the careful consideration of what can be meant by a 'curve' is a much later development than Cauchy's theory of functions, and it would seem that a student would be rather puzzled by a complete treatise on *analysis situs* before he begins to work with complex integration at all. The authors seem to be wise in omitting such a detailed discussion as is given in Mr. Watson's Tract. Also, in the fourth chapter of the second edition, on Riemann integration, which the Preface says is entirely due to Mr. Watson, there is a very brief dismissal (p. 61) of the question as to the bounds of a function of n variables which Mr. Watson, on pp. 17-20 of his Tract seemed carefully to avoid as if it was something quite different from the question of the bounds of a function of one variable.

Perhaps the most important addition to the second edition is the interesting discussion of uniformity and the Heine-Borel theorem (pp. 52-54). This theorem comes particularly into prominence when we have to prove Cauchy's theorem on complex integration in the manner of Goursat (pp. 84-89). In the first edition, although it was published subsequently to Goursat's papers, Prof. Whittaker gave a 'proof,' which he imagined to be Goursat's, but in which the whole point was missed. On p. 48 of this edition Prof. Whittaker said: 'Now suppose that each of these small contours has linear dimensions of the same order of magnitude as a small quantity l'; and by using the then slightly obscure notions of 'the order of a small quantity,' Prof. Whittaker was enabled to conceal the fact that it is only Goursat's lemma, which is a form of the Heine-Borel theorem, that shows us exactly how we can prove Cauchy's theorem without some of the restrictions that mathematicians before 1900 thought necessary. The main point might have been made clearer in the second edition, but we ought not to grumble, as at any rate the theorem is strictly proved.

In the first edition (pp. 46-47) there was a would-be proof that if the temperature were an analytic function of the time, we could foretell the temperature for all time from a knowledge of it for a day. Of course we cannot distinguish empirically between an analytic function and one that is merely continuous, for we cannot unfortunately make an infinite number of observations. It is a matter for congratulation that this example is omitted in the second edition.

One other logical point must be noticed. The avoidance of what Russell calls 'the multiplicative axiom,' which forced itself prominently on the notice of mathematicians in connexion with Zermelo's work of 1904 on the theory of aggregates, is a very important question in the formulation of the Heine-Borel theorem. On p. 53 of the second edition, the avoidance is made without any remark that it is avoided. There should, I think, have been a discussion of this point at least in an appendix.

I think that the two results of our study of the influence of logical work on the psychological problem of teaching higher mathematics are: firstly, except possibly in the case of the introduction of complex numbers, historical order is the best for bringing new ideas before a student's mind—and the logical state is a very recent state; secondly, we need organisation among writers of text-books, so that useless and confusing overlapping may be avoided.

PHILIP E. B. JOURDAIN.

God and Freedom in Human Experience, containing the Donnellan Lectures for the year 1913-14, delivered before the University of Dublin. By CHARLES F. D'ARCY, D.D. London: Edward Arnold, 1915. Pp. viii, 312.

SINCE the days of Berkeley philosophic bishops have become rarer and black swans more familiar, and yet if the soul of Plato could be beguiled to incarnate once more in this welter of Becoming and to contemplate our ecclesiastical polity, he might be tempted to advance the paradox that until philosophers became bishops or bishops philosophers reason could never be reconciled to faith and the intellectual realm would remain divided against itself, to the subversion of its whole authority over the minds of men. We ought therefore to feel grateful to the Bishop of Down for not despairing of combining philosophy with episcopacy and for holding fast to the conviction that "every philosophy is implicitly a theology, and theology is always the interpretation of religion in terms of some philosophy" (p. 6), the more so when we remember what a very strenuous flock he has had to lead through the very stirring times in which he has composed and published these lectures. Dr. D'Arcy's work is indeed a very gallant attempt to

traverse the whole battle-ground of philosophy and to fight his way through to orthodoxy. He starts with Berkeley and pays a fine tribute to "the only Irishman whose teaching takes its place as a necessary element in the main stream of human thought," and who "belongs to the great succession of the Immortals" (p. 61). But he does not on this account abjure the German type of idealism and his old allegiance to T. H. Green. He merely washes down the dry bones of the old 'idealism' with copious draughts of the new wine of Bergsonism. In the course of his progress the Bishop encounters and recognises pretty nearly all the traditional 'difficulties' of theology and philosophy, and if he does not always contrive to overcome them he at least discusses them with perfect courtesy and rare candour. The wide scope of his synthesis may be gathered from the list of his chapter headings, Experience, Degrees of Reality, the External World, God and the World, Freedom, Necessity and Experience, the Problem of Pain, Evil, Freedom and Purpose, Future Life, Mysticism, History, Natural and Human.

Where the view is so comprehensive and the material so rich there must needs be much to tempt the critic, who will exhibit his prudence in selecting the points he comments on, and his self-control in limiting their number. I can only hope therefore that the points I shall endeavour to bring up will be judged important and their discussion profitable. My selection is comprised in the following list of questions—(1) Is experience to be described as a continuum or as a synthesis? (2) What is the place of solipsism in idealistic modes of thought? (3) Does the 'independent' existence of a real world imply a God? (4) If it does, how is the consequent relation of the divine to the human consciousness to be conceived?

(1) The first question deserves the place of honour because, though it seems to concern primarily nothing but the relative convenience of rival descriptions, our choice between them has far-reaching consequences and greatly affects our valuation of the historical formulation of philosophic problems. On the one hand, if Hume was right in starting from the common-sense conception of plural 'things' and philosophic in sharpening it into a succession of utterly discrete events, we shall be right in inferring that he has dissected the cosmos into a chaos and shall hold in the highest honour the synthetic principles which will then be needed to compact together the dust-heap of sensations and to reconstitute the world; so we shall revere the philosophers who, like Kant and T. H. Green, have laboured to discover or invent such principles of synthesis. But if on the other hand, the world, life, and experience are truly a continuum from first to last, and are arrested into 'things' and dissected into 'events' only by temporary artifices of thought, which serve the passing purposes that bubble up in the stream of consciousness, we shall have no use for syntheses and principles that connect what is never really dissevered. What we

shall need will be principles of *analysis*, and we shall trace the motives and methods of the fictions by which our thought dissects our experience. In either case we shall realise that whichever method we adopt we cannot retain the other, and that all problems must be viewed differently according as we prefer the one or the other. I cannot find, however, that Dr. D'Arcy has fully realised this corollary. He begins by emphasising that experience is a continuum, and describes it admirably and eloquently, after Bergson (especially p. 28). But subsequently he seems to slip back into the phraseology of the opposite method. We hear (p. 37) that "the abstracting process . . . may very well be combined with a synthetic process by which the manifold of sense is formed into an intelligible world". He is not content to say that the self is "a concrete living experience," but tells us that it is also "the ultimate unity which *lies behind*[1] all our thinking," "*presupposed*[1] in every mental process" (p. 48), and "a concrete *uniting and integrating agency*".[1] And do not these phrases all affirm what is called (p. 47) "the weak point in all the current systems of Absolute Idealism which trace their origin to Hegel, and which are most notably represented in English thought by T. H. Green and his disciples," *viz.* that "they turn the concrete unity of the self into an abstract principle"—of synthesis?[2]

(2) Dr. D'Arcy is quite clear that idealism naturally incurs the charge of solipsism. For "the material world when examined is found to be essentially such that it can have no existence except for the consciousness of a knowing mind" (p. 57). The effect of this argument is described as 'terrifying'. "It seems to reduce everything to illusion." Not that "any reputable thinker has committed himself to this doctrine, but many dread it so much, it has become to them so oppressive a philosophical nightmare, that they escape from it only by a leap in the dark" (*ibid.*). Dr. D'Arcy disapproves on Kantian grounds of Mr. McDougall's escape from solipsism by postulating a transcendent use of the category of causation (p. 58). On pp. 67-68 Prof. Ward's theory of inter-subjective intercourse is (paradoxically) charged with being "really a form of solipsism," and reducing the physical universe to a phantom. Yet on p. 101 it is admitted that "if any one dares to adopt solipsism" "his position is unassailable". From p. 98 it appears that "the only way to escape solipsism is to hold fast to that deliverance of our common experience and our common sense, that the world which we all know is one and the same world," and, *taking this as fact*, it is argued that "the only possible interpretation of it is that the Universal Spirit which gives being

[1] Italics mine.

[2] On p. 58 also 'modern psychology' is praised for confuting Hume by proving "the synthetic activity of conscious experience," and on p. 101, the 'self-conscious subject' is called a "uniting agency".

to this great world of things in time and space is, in some way, or in some sense, for us an all-enveloping life".

With all deference to Dr. D'Arcy, his arguments here seem quite unconvincing. It is by no means easy to justify the treatment of solipsism as a philosophic bogy. But if it should properly induce a philosophic *sauve qui peut*, it is hard to say why Mr. MacDougall's way of escape should be more improper than Dr. D'Arcy's. For the transcendent use of the causal principle may surely claim to form part of the 'deliverance of common sense' in which Dr. D'Arcy puts his trust. It does not seem to be true, however, that such desperate expedients are needed or that solipsism is philosophically unassailable. It may be shown that the belief that it is, while it may be right in declaring that for solipsism life becomes a dream, is wrong in admitting that dream life justifies solipsism.[1]

Lastly "the argument from a fact to its only possible interpretation" (p. 80, *cf.* p. 306) is surely a most precarious and inadequate method of proof. Even where alternatives have not been simply overlooked, it only proves that no one has so far thought of any and so offers no guarantee for the future. In this particular case it does not appear to be a *fact* that "we all know one and the same world," though it is a convenient assumption which common sense is quite entitled to make for practical purposes. For whenever the matter is inquired into more closely, it turns out that there are always individual differences in the perceiving even of 'common' objects, while large tracts of every subject's experience (pleasures, pains, memories, dreams, etc.) are obviously unshareable.

(3) The suggestion that the common world implies a divine knower in whom human knowers somehow participate has often been made, and carries us on to the question how idealism should interpret the world's 'independent' reality. Dr. D'Arcy agrees with Dr. Rashdall that "the world as we know it exists in our experience . . . if then the world that I know is part of a much vaster world which is independent of me which existed ages before I was born . . . it must be because there is an experiencing self indefinitely greater than I who makes this great world possible". Unlike Dr. Rashdall, however, he holds "it as obvious that since the world I know is part of His world, I, who know it, must in some sense share His life". Or otherwise "a world which is one and the same and which exists only as it is experienced" can "enter into the experiences of a multitude of distinct subjects" . . . only because they all "share in one all-embracing conscious life" (p. 97).

The cogency of this argument evidently implies the absolute, and not merely the pragmatic, commonness of the 'common' world, an inference from human to a divine knowing, resembling the

[1] *Cf. Humanism* (2nd ed.), pp. 266-267.

former in certain definite respects but differing in indefinite others, and an audacious identification of the world as it appears to God with the worlds that appear to finite knowers. All these assumptions would seem to be highly disputable, and both idealism and realism would seem to be capable of accounting for the belief in 'independent' reality on simpler and less questionable grounds.

(4) In any case the value of the theory would remain contingent upon its success in elucidating the difficult problem of the relation of the divine to the human consciousness. Dr. D'Arcy is reluctant to conceive God as merely personal, seeing that personality is in a sense exclusive. Yet he is dissatisfied also with T. H. Green's 'eternal consciousness' and sees that it makes God either an abstract law according to which experiences develop, or the self of man, and so deprives man of his identity (p. 89). So he suggests that God should be conceived as superpersonal (p. 104 *f.*) and appeals to religious experience.

The crux here would appear to be how we can conceive one consciousness as including, without destroying, another, or depriving it of its characteristic limitations, and it may be suggested to Dr. D'Arcy that light may be thrown on this problem by the study of the recorded cases of multiple personality. The 'Beauchamp' case, for example, shows how the consciousness of 'Sally' could be immediately aware of the whole experience of 'B I' without sacrificing the distinct personality of either. True, 'Sally's' awareness of 'B I' could hardly be described as sympathetic: but may it not be an illusion of human conceit to believe that a being that could know us from within as we truly are would needs love us? A somewhat similar doubt besets the argument from the mystic experience. Dr. D'Arcy is inclined to make much of mysticism, and even to make it coextensive with personal religion (p. 244). But he rather boggles at the *via negativa*, and thinks its blankness is "as far as possible from the Divine fulness" (p. 248). This, however, is really an argument against mysticism as such: and a study of Prof. Flournoy's superb case of 'Cécile Vé'[1] would probably convince him that the mystics have not misdescribed their experience—even though it may be a foretaste of death rather than of a diviner life.

F. C. S. SCHILLER.

Critical Realism: A Study of the Nature and Conditions of Knowledge. By ROY WOOD SELLARS, Ph.D. Chicago and New York: Rand McNally & Co., 1916. Pp. x, 283.

CRITICAL Naturalism would be a better description of the contents of this book than the title its author has chosen. His main concern is with the question what sort of *fact* knowledge is: or more

[1] *Cf. Archives de Psychologie* for May, 1915 (No. 57).

generally (and, indeed, more accurately) what sort of facts consciousness and the mind are. His critical realism is neither the realism of the scholastics, nor a realism of the current sort which denies the existence of representative ideas. It is a mediate realism with a trinity of mind, idea-object, and physical existent. And although this realism may adequately express all the reality which a natural science that knows its business can claim, it does not (to keep to problems of perception) give us direct acquaintance either with a material world in Reid's sense, or with the non-psychical world which a theory like Mr. Russell's would substitute for the old conception of matter. "Critical realism," according to Mr. Sellars, "must be connected with a non-apprehensional view of knowledge" (p. vi): and again, "The position adopted in common by Stout and Russell that ideas do not intervene between reality and the subject knowing, is due to this hasty inspection view of knowledge" (p. 256).

Indeed, if I understand him rightly, Mr. Sellars holds that an 'inspection view' of knowledge *must* be hasty, and cannot be sufficiently critical. This is a hard thing to say of Reid's 'way of reflection,' or of the painstaking inquiries of many of the new realists; but he implies it. "We have, then, the subject-object structure within our experience and no idea intervenes between them. . . . True, but other reasons may lead us to judge that the object of our thought is not actually the thing which we take it to be" (p. 276). These other reasons are, on the one hand, the inadequacies and contradictions of natural realism (or the theory that independent physical objects are directly perceived), and, on the other hand, what is called the 'advance of the personal'. Psychology and logic both prove to demonstration that knowledge is essentially an achievement, and not merely a treasure trove which the mind may find or miss. The main business of a critical inquiry is to begin with the meanings in the matrix of perception, and to analyse these meanings in a thoroughly empirical spirit without the dogmatic preconceptions of the usual psychologies, Newtonian physics, or Cartesian dualism. Mr. Sellars's thesis is that when this task is performed with sufficient persistence and care the problems of knowledge and of the relations between minds and the rest of the universe solve themselves. There are no homeless minds or mysterious cognitive relations, but only a single nature in which minds have a function which can be empirically ascertained.

Even if it were fair to describe the new realism as an 'inspection view of knowledge' I do not see that either of these main types of objection to it is necessarily fatal. With regard to the first of them the new realists have given to the world so many theories of the relation of sensibles to physical objects that it is difficult to see what limits are set by realistic assumptions to the possibilities within this field. And unless the North Pole is as

easy to discover as a child's Christmas stocking there is no inconsistency between the views that knowledge is an achievement and that direct acquaintance must logically have precedence over all other kinds of knowledge. Finding may be a very great achievement, and involve the most intense mental activity in the way of attention, etc. In a word, Mr. Sellars seems to assume without sufficient care that if knowledge is an achievement, 'idea-objects' must be constructs. This is very easy to assume when knowledge is regarded naturalistically as simply part and parcel of an actively functioning stream of consciousness; and the same presuppositions tend to obscure the fact that problems of knowledge are much wider than problems of mere perception and of the relation of minds to 'external things'. As for the supposed mystery of a cognitive relation it is enough to say with Arnauld: "Et ainsi, ne pouvant y avoir de pensée ou de connaissance sans objet connu, je ne puis non plus me demander à moi-même la raison pourquoi je pense à quelque chose, que pourquoi je pense, étant impossible de penser qu'on ne pense à quelque chose". However, Mr. Sellars is an acute reasoner and an accurate scholar so he has a right to deprecate *ex parte* criticisms, and to attack his problem in his own way.

The naturalistic solution of these problems turns upon the interpretation of the nature and function of mind and consciousness. The conclusion of the ninth chapter is that consciousness is a variant within 'these highly evolved parts of the physical world which we call organisms' (p. vii). It is a functional variant of the cortex. Thus consciousness is part of the reality of the brain and the perplexities of the problem of mind and body result primarily from the fallacy of first of all de-animising the brain, and then asking how it can conceivably be conscious. Consciousness must, indeed, be distinguished from mind, for mind is 'conserving and enduring while consciousness represents the moment of adaptation and change' (p. 251). The mind should not be really distinguished from the brain regarded as a functioning system, and the mental control of consciousness by apperceptive systems and the like should be understood after the same fashion. This conclusion is, I think, less unusual than Mr. Sellars thinks, but he is to be commended for his statement of it, and for his argument in its favour.

According to the presuppositions of the book, this solution of the problem of mind and body is, at the same time, the metaphysics of knowledge. For knowledge must be part of what consciousness is. 'Ideas' are parts of the conscious field, and their relations to the other parts of the same field may be described, from various points of view, either in Bradley's way as the contrast between self and not-self, or in Ward's way as the subject-object duality, or in the way of the new realists as the direct apprehension of (a certain class of) objects. These contrast-

meanings within experience are not, however, the chief part of the problem. The extra-experiential *reference* of ideas is still more fundamental. Idea-objects are meanings. They are knowledge and also knowledge-about. This knowledge-about is not apprehension at all, for that implies the existential compresence of the object. It is simply what it purports to be; a set of ideas and propositions *about* a physical object, indicating relationships of this object, although the object itself cannot be directly apprehended, and should not be understood in a sense which makes apprehension necessary. Berkeley's arguments were quite irrelevant to this interpretation of the character of a physical object; but modern science understands by a physical object just what it might be expected to mean in terms of this theory. A physical object is that which certain ideas and propositions *are about*, and that which controls these ideas and propositions. The denotation of idea-objects is thus explained, and truth consists of knowledge triumphant or tested ideas.

The discussion of these points is very careful and interesting, and is neither overloaded with references nor 'got up' without, at least, a genuine attempt at sympathetic insight. It bears throughout the stamp of individual reflection, and the book is full of good things which a mere outline like the present cannot touch. It may therefore be recommended to readers of MIND whatever their way of thinking. Still the author must expect to encounter more serious difficulties than he has provided for. The physical object of his theory, like Kant's 'transcendental object,' is known merely as an x about which certain propositions are; but it cannot merely *be* that, just as my friend's mind, if it is to my knowledge only an x about which this or that is true, must, in itself, be more than this x. Again, the examples which Mr. Sellars gives of this extra-experiential reference in the concluding pages of his book (as is frequent on such theories), are not really in point. They deal with the relation of image to percept; but the percept *is* apprehended, and does not, in all probability, exercise the same control as the physical object itself. Finally, there are many features of knowledge which are quite independent of this naturalistic way of regarding it. Thus there is the relation of difference, and fundamentally the same relation of difference, between the reds and blues of perception, imagery, and the correlative physical vibrations; and this would be true whether the objects compared were constructs or not and whether they were or were not intuited. The naturalistic standpoint which takes perception as the type of all knowledge, and is primarily concerned with the manner in which it occurs, obscures these issues, and even seems to imply that any object which is directly apprehended must be existentially present, precisely in the way in which a sensible is present.

But let that pass. This book is well worth reading, and the promise of a subsequent work on the *Categories* is welcome. It is

well written too, granting that its English is not *the King's* English, and that its idiom and terminology sometimes grate on cisatlantic ears. Some of the explanations concerning natural science are disappointing, as in the case of the curious remarks concerning rest and motion on p. 232; and I wish there was an index. But the merits of the book are very considerable.

JOHN LAIRD.

VII.—NEW BOOKS.

Second Thoughts of an Economist. By WILLIAM SMART, D.Phil., LL.D. Macmillan & Co., 1916. Pp. lxxix, 189. 5s. net.

THE first third of this book is a sketch of the life and work of the author written by a former student and assistant, and including a notable tribute to the late Prof. Smart's work on the 1905-1909 Poor Law Commission from the Chairman of that body. It was, perhaps, to that work that the present book is due. On a man so warm-hearted as Smart the mass of evidence brought before the Commission made a deep impression. He found millions of his fellow-men living, and, seemingly, foredoomed to live, a savourless, monotonous, and undeveloping existence, and his misgivings—which had long haunted him—of the direction in which our economic life was issuing were quickened. It is characteristic both of the modesty and the industry of the man that, instead of urging some panacea of his own, he set to work to gather the materials whereby the labour of others might be rendered easier and more enlightened. When, however, two volumes had completed to 1830 his *Economic Annals of the Nineteenth Century*, he seems to have been aware of Death's shadow on the threshold, and, casting off the ideas of loyalty to his Science and lack of confidence in himself which had hitherto kept him silent, he was writing, till Death laid aside his pen, these Second Thoughts. Here he no longer confines himself to the limited field of Economics but "looks over the hedge to see where his Science comes in in the general scheme of things," and he writes courageously on the ethical aspects of his subject. It is these circumstances that give to this book, unrevised and incomplete as it is, such unique interest.

Prof. Smart has two chapters on the Distribution of Income and Work before passing on to Part II. which he has headed Reconstruction. As to Income, he notes the great increase of the National Income and points out that, notwithstanding the parallel but less rapid increase in population, the amount is now sufficient to average out at £222 per annum per circle of five persons, "enough to make everybody at any rate well fed, well clad, well housed". Dismissing at once impracticable schemes of equalisation of income, he then discusses the means by which the income of small wage earners might be increased, and reaches the conclusion that, apart from State Redistribution by taxation, for the extension of which method he has no liking, the only way is by the increase of the National Income. His idea seems to be not so much that the increase will yield to all a larger share as that the very process by which the increase is given will force man up to his true position of a brain worker, for he looks forward to a much more extended use of machinery, and, in particular, of automatic processes—"the progress of industry is tending to the elimination of the man who is merely a machine and to the survival of the Man who Thinks". Increased competition among the brain workers will level down their incomes, but such have the 'fine life' as compensation and the Life is the real wage. This naturally leads to a

discussion of the Distribution of Work. Here the author is more despondent, for, whereas in the former chapter he has only to face the necessity for the weeding out of a decreasing number of the economically unfit, he now, arguing that a man's daily work is a far greater thing towards the developing of the God that is in him than his wealth, finds millions engaged in monotonous, undeveloping machine tending whose economic position is secured only by the sacrifice of the purpose, whether regarded as a preparation or an end, of life itself.

So we come to Reconstruction, but it is a moral, not an economic, reconstruction for which the author pleads. "I see the economic life," he writes, "as a vast, complex, and unconscious co-operation of consumption and production," and, in essence, what he advocates is that the co-operation should be conscious, not only of itself but of its ultimate aim, what he calls "the quite definite moral purpose—the saving of the country," which phrase is to be taken as meaning the granting to everyone of room and opportunity to find in their economic life their moral life also. There follow two chapters on the Responsibility in Consumption and in Production. The consumption of wealth which recreates as much wealth as it destroys he holds morally justifiable, but, for the rest, we should aim at stimulating by our demand preferably the production of wealth which can be consumed only in direct, or, through its qualities of endurance, indirect, association with others. Thus wealth is made to 'go further,' and man, as a consumer, gains the inestimable benefit of carrying out a moral purpose in the ordinary daily spending of his income.

There remains, however, the problem of toil, uncongenial and undeveloping work. Prof. Smart appears to think that the great mass of workers have little choice in the selection of their occupations and he appeals to the employer to take himself seriously as a public servant and to recognise his high duty of organising labour to earn its full wages. The employer must regard the employing motive as predominant and contrive to give his workers an interest, a hope, and a stimulus in their working lives quite apart from, and in addition to, their monetary reward.

Whatever one may think of the possibility of educating men to adopt consciously these moral standards in consumption and production, or of the extent to which such adoption would abolish the evils incident to the present economic system and yield a 'fine life' to all, it is impossible to read the book without having one's admiration rekindled for the nobility of character and high purpose of the writer; all unconsciously the pages glow with their testimony.

J. P. Day.

Freedom and Purpose. An Interpretation of the Psychology of Spinoza. By James H. Dunham, Ph.D., Professor of Philosophy, Temple University. Philadelphia. Psychological Review Company, Princeton, N.J., and Lancaster, P.A., 1916. Pp. ii, 126.

This essay is "an attempt to interpret Spinoza's ideas of human consciousness in terms of modern psychology". The plan followed is simply to give the "interpretation," in the text and copious references, confined almost entirely to the *Ethics*, in footnotes.

Now Spinoza is primarily a metaphysician and his psychology appeared to him to be essentially connected with his metaphysics. Prof. Dunham ought therefore to have inquired carefully how and how far the psychology is separable from its metaphysical presuppositions. But no discussion of this question is to be found in his essay, and there is no evidence that he

has seriously grappled with the problem. The account of the psychology itself, even if we make the fullest allowance for the difference between an "interpretation" and a translation, is very far from accurate either as a whole or in detail. Prof. Dunham throughout ignores Spinoza's rationalism and substitutes for it, without warning or discussion, views harmonising with his own more empirical position. The fundamental distinction between Imagination and Understanding is certainly psychological, though it has a metaphysical basis. Yet Prof. Dunham so far from placing it in a clear light, persistently ignores it, on the ground, I presume, that it belongs to the "shell of scholastic formulæ" from which Spinoza "never wholly released himself" (Preface). He asserts, at the outset, that for Spinoza "percept and concept are inevitably joined; there is no distinction between them" (p. 8). As the sequel shows this is meant to apply to Intellect and not merely to generic images. For Spinoza's "ratio" in its practical aspect, Prof. Dunham substitutes what he calls "characterisation," which he defines as the "working of type purposes into an individual system". This means, apparently, the distinctive form which the impulses or modes of behaviour, common to a species, take in the individual member of the species. For Spinoza's intuition he substitutes "reflexion" in the sense of self-consciousness. The general failure to recognise what Spinoza meant by "Intellect" emerges in a glaring form in a statement concerning adequate ideas (p. 41). "The human mind, even in its infancy, has within it certain 'adequate' as well as inadequate ideas. An idea is adequate when it reflects an exertion entirely appropriate to its body's powers, as, *e.g.*, when it seeks for food or cries out in pain; though purely reflexive such acts are free." In support of this, Prof. Dunham refers only to *Ethics*, iii., 1. What Spinoza there asserts is that "in so far as the mind has adequate ideas it is active, and in so far as it has inadequate ideas it is passive".

Many of the references to Spinoza's writings in the footnotes obviously fail to support the exposition or "interpretation" of his views which is given in the text. I give an example taken at random. "Impressions derived from contingent bodies, *i.e.*, bodies dependent for action on secondary causes, are fainter than those instilled by necessary things" (p. 50). This passage at once suggested the questions: Can Spinoza have seriously spoken of contingent bodies as if the contingency were something real independently of our point of view? and, Where does he define contingency as dependence on "secondary causes"? Turning to the footnote, we find a reference to *Ethics*, iv., 11, where it is asserted that "emotion towards a thing which we imagine as necessary is *cæteris paribus* more intense than towards something possible or contingent". There is nothing about "secondary causes," and the only relevant definition of contingency is that given in *Ethics*, iv., Def. iii.: "I call singular things contingent; in so far as, when we attend only to their essence, we discover nothing which necessarily posits or excludes their existence". Of course, according to Spinoza, there is nothing really contingent.

I would not, however, say that the book is without value. Here and there it contains passages which really illustrate Spinoza's doctrine in a welcome way; and as a whole it is interesting if it is taken not as an interpretation or exposition, but as the development of an independent psychological theory of freedom, more or less akin to that of Spinoza and perhaps inspired or suggested by reading him. I say "perhaps," because I do not know whether the author derived it from Spinoza or first worked it out independently and then compared it with Spinoza's teaching.

War, Progress, and the End of History. VLADIMIR SOLOVIEV. Translated from the Russian by ALEXANDER BAKSHY, with a Biographical Notice by Dr. HAGBERG WRIGHT. London, 1915. University of London Press. Pp. xxxiv, 228.

Soloviev's remarkable dialogues would perhaps be more becomingly reviewed in a journal of general literature than in so specialist an organ as MIND. Not that they are not full of philosophical thought, but the philosophy they contain is "popular" philosophy of the very best kind which appeals as much to the average educated man as to the specialist student. To review them is almost like attempting to review the *Gorgias*. Judging of their literary quality, as, being ignorant of Russian, I am obliged to do so through the medium of a translation by a Russian not yet perfect in English idiom, I should conceive that their sheer literary beauty in the original text must be quite extraordinary. A delightful humour is shown in the characterisation of the personages who take part in the conversations, a brave simple-minded old general whose character finds expression in his own statement that the things for which he cares supremely are, and in this order, God, Russia, and his military work, a rather cosmopolitan and very "disillusioned" diplomatist devoted to what he calls "progress," *i.e.*, safe and comfortable existence, and a peculiarly delightful fool, the "prince" who acts as spokesman for the "pacificism" and "true Christianity" of Tolstoy. There are, besides these, a lady who, though of no importance for the development of the author's thought, is a quite real and amusing person, and an unnamed speaker, Mr. Z., who represents the fervent Apocalyptic Christianity of Soloviev's own later years. The general line of thought that runs through the book is very simple. The Tolstoyan doctrine of non-resistance of evil is hopelessly illogical, and is also, when presented as "true" Christianity, a fraud into the bargain, for Christianity means definitely an unrelenting war of good against evil. The hope of establishing a "Kingdom of God" by pacific "progress" is a vain thing, for progress can have no value unless we are assured of the permanency of the soul. A human progress which is to end in the extinction of the human race provides no adequate incentive to noble action. And the victory of good over evil can only be secured by victory over the "last enemy," death, the supreme manifestation of the evil principle. The very centre of the Christian faith is therefore the hope of the Resurrection, and "progress" is no more than a sign that the process of history is coming to its end with the appearance of Antichrist and the Second Advent. This thought is worked out elaborately in the extremely brilliant story with which the third dialogue ends, as with a sort of Platonic myth, a story which attempts to forecast how the political and social conditions of the opening of the twentieth century might lead in a few generations to the establishment of a universal Empire and the development of the Superman at its head into the Antichrist. Whatever one may think of Soloviev's Apocalypticism, one can hardly doubt, as one follows the narrative, that if Antichrist is to come, he must be very much the kind of being Soloviev had imagined. And I pity the "pacifist" who cannot appreciate the humour of the General's caustic criticism of his own doctrines. The translation is readable enough, though the translator finds some trouble with English idiom, especially with regard to the use of the definite article, and occasionally mars a passage by the use of slang words, like "enthuse". The friends to whom he acknowledges his indebtedness might perhaps have warned him that English readers would hardly recognise the Buddha under the description "the hermit of the Sacciah tribe," which for them requires

to be translated back into Sanskrit, and that "Suttee" means to us something very different from a Buddhist "Sutta". Some, too, will hardly understand that "the St. Stephen's agreement" means the treaty of San Stefano. And Orthodox, when used as a special title of the Eastern Churches, should always have a capital letter. (*E.g.*, on page 203, "many an orthodox Catholic and Protestant," obviously ought to read, "many an Orthodox, Catholic and Protestant".) Some familiar non-Russian names also appear in a Russian disguise, *e.g.*, Gufeland for Hufeland, Baroness von Zutner for von Suttner. I note an awkward mispunctuation at page 210, where line 15 should, of course, read, Domine, salvum fac magnum imperatorem, without the full stop after Domine which gives that word a false reference.

A. E. T.

Plato and Christianity. Three lectures by WILLIAM TEMPLE. Macmillan & Co., 1916. Pp. 102.

Mr. Temple's three lectures, originally delivered to an audience in Oxford during the Summer Extension Meeting of 1915, contain an excellent and brightly written Summary of Plato's ethical and religious teaching. In view of the current tendency to neglect the importance of Plato's theism,—even the very fact that to all intents and purposes Plato was the originator of philosophical theism seems to be unknown to many writers of big volumes on Greek philosophy,—these lectures should be instructive to a much larger class of students than those to whom they were originally addressed. The writer of the present notice finds himself in substantial agreement with most of what Mr. Temple says and would gladly content himself with a simple commendation of this excellent little book. He finds it strange, however, that Mr. Temple, who draws on every other important dialogue, is absolutely silent about the one work in which Plato presents us with something like a formal digest of his doctrine of God and the soul. Has Mr. Temple, like so many Oxford students, forgotten that Plato wrote the *Laws*, and that in later antiquity the tenth Book of the *Laws* was commonly recognised as *the* great repository of Platonic religious teaching. Some of the sayings about "sacrifice" in the last lecture are perhaps a little hard. Mr. Temple seems in one breath to find fault with Plato for not demanding enough sacrifice from the individual and also for insisting that *real* sacrifice always means giving up something that is really worth having. And again he seems to make an unreal difficulty out of the fact that Plato could see the real pathos in the last hours of Socrates and yet object to the maudlin "sentimental" drama. Surely, to take a modern instance, it is quite reasonable to appreciate genuine pathos and yet to have no taste for Dickens's exploitation of children's death-beds. But perhaps the present writer has misunderstood Mr. Temple's drift.

A. E. T.

Filosofi del Tempo Nostro. FRANCESCO DE SARLO. Firenze, 1916. Pp. xv, 240. *La Cultura Filosofica.*

Eight essays on the work of recent philosophers, Paulsen, Shadworth Hodgson, Ward, Bradley, Reinke, von Hartmann, Zeller and Bonatelli. The general link of connexion between the various studies is explained in the author's Preface. He, like some of us in this country, feels that Philosophy in the last half century has suffered from the tendency to disregard national traditions for foreign ways of thought imported

chiefly from Germany. The study of foreign philosophies is always important as a corrective of one-sided national tendencies in thought, but needs to be undertaken in a critical spirit, and in the conviction that if there is ever to be a philosophy for all mankind it cannot be the exclusive task of thinkers of any one race or nation to produce it. Hence the essays aim at criticising and evaluating the work of the philosophers with whom they deal from the standpoint of a native Italian philosophical tradition. As the expression of such a tradition they should be found as valuable outside Italy as within it. In the main the author's attitude is a defence of rationalism against "voluntarism" and "pragmatism," of Theism against the current pantheism of German systems, and of the objective value of science against "phenomenalism". Many of us in England will sympathise heartily with him on all the points of his attack. His criticisms are always pertinent, and in the present writer's opinion frequently unanswerable. Perhaps Mr. De Sarlo's own views are most definitely indicated by his highly appreciative essay on the Theistic creationism of Reinke and his lucid discussion of the place of von Hartmann among German philosophers. To ourselves the most interesting articles will probably be the two long papers on Shadworth Hodgson and Bradley, the former, perhaps, the most valuable thing in the book. The author writes with so much grace and lucidity that it is the more regrettable that the book is unusually disfigured by misprints, sometimes to the entire destruction of the obvious sense of a paragraph. If this is the case with Mr. De Sarlo's own text, it need hardly be said that his quotations from English authors fare worse. Indeed, it is only the occasional quotations from the German which seem to be in general correctly spelled.

A. E. T.

Received also—

M. W. Keatinge, *Studies in Education*, London, A. & C. Black, 1916, pp. viii, 205.

Emile Boutroux, *Philosophy and War*, London, Constable & Co., 1916, pp. xii, 212.

Vladimir Soloviev, *War, Progress, and the End of History*, London, University of London Press, 1915, pp. xxxiv, 228.

C. Pekelharing, *Kant's Teleologie*, Groningen, Noordhoff, 1916, pp. viii, 243.

H. W. B. Joseph, *An Introduction to Logic*, Second Edition, Revised, Oxford, Clarendon Press, 1916, pp. xii, 608.

Emile Boutroux, *The Contingency of the Laws of Nature*, London, Open Court Company, 1916, pp. ix, 196.

A. M. Irvine, *The Deanes of Oslow*, London, George Allen & Unwin, 1916, pp. 256.

Etienne Giran, *A Modern Job*, London, Open Court Company, 1916, pp. 92.

Dr. Ed. Claparède, *Psychologie de l'Enfant*, 5ième édition, révue et augmentée, Genève, Librairie Kundig, 1916, pp. xii, 571.

Edwin B. Holt, *The Freudian Wish*, London, T. Fisher Unwin, 1915, pp. vii, 212.

George Boole, *Collected Logical Works*, Vol. ii., *Laws of Thought*, Open Court Company, 1916, pp. xiii, 448.

J. R. Mozley, *The Divine Aspect of History*, 2 vols., Cambridge University Press, 1916, pp. xx, 407, and x, 509.

Arthur Chandler, *The English Church and Reunion*, London, Methuen & Co., 1916, pp. ix, 190.

VIII.—PHILOSOPHICAL PERIODICALS.

American Journal of Psychology. Vol. xxvii., No. 2. **W. S. Foster** and **K. Roese.** 'The Tridimensional Theory of Feeling from the Standpoint of Typical Experiences.' [Experiments on harmonical tones (paired comparisons) with observers trained in accordance with Wundt's directions. There is no evidence of Wundt's theory; judgments are apparently made on the basis of sense-feelings.] **A. J. Todd.** 'Primitive Notions of the "Self".' [Deals with the factors (name, shadow, soul or dream-double, property, group) and metamorphoses of the self. The sense of self is essentially social, and its psychological constitution reflects all aspects of the functional unity of mind.] **G. F. Arps.** 'A Marked Case of Double Inversion.' [Case of a boy of seven, of bad heredity, who writes upside-down and backward. The horizontal error is the more obstinate. In education, visual anomaly has to be subordinated to (and correlated with) normal tactual perception.] **S. H. Bliss.** 'The Significance of Clothes.' [Covering, appendages, ornaments, characteristic of subhuman life, survive in man as sub-conscious dispositions, and are actualised in varieties of clothing.] **H. T. Moore.** 'A Method of Testing the Strength of Instincts.' [First report of an attempted measure of ten traits by the association-reaction method.] **E. J. G. Bradford.** 'Measures of Variability.' [The MV measures individual improvability rather than variability. There is a positive relation between ability and improvability; none between ability and variability; a negative relation between variability and improvability (two tests of two groups of subjects).] **E. S. Abbott.** 'The Causal Relations between Structure and Function in Biology.' [Mechanically structure, teleologically function is determinant.] **M. Luckiesh.** 'A Note on Colour Preference.' [Colours are preferred whose dominant hues are near the limits of the spectrum, whose tints are relatively low, and whose chromas are relatively high.] **J. C. Chapman** and **W. J. Nolan.** 'Initial Spurt in a Simple Mental Function.' [Proof of spurt in test of continuous addition for fifteen minutes (seven trials).] **S. W. Fernberger.** 'The Effect of Practice in its Initial Stages in Lifted-Weight Experiments and its Bearing upon Anthropometric Measurements.' [It is necessary to make fifty determinations upon every comparison-pair.] **E. B. Titchener** and **H. P. Weld.** 'Minor Studies from the Psychological Laboratory of Cornell University.' **E. M. Alspach.** 'xxvii. Simplicity *versus* Complexity of Colour Hues.' [Three types of experiment bring out the psychological simplicity of the intermediate colours and of green.] Book Reviews. Book Notes. **S. W. Fernberger.** 'A Laboratory Note.' **Editors.** 'Oswald Külpe, 1862-1915.'

Zeitschrift f. Psychologie. Bd. lxxiv., Heft 5 und 6. **H. Henning.** 'Der Geruch, ii.' [There is no compensation of odours. Dual stimuli give rise, according to circumstances, to various sensory experiences: combination, succession, coincidence, duality, rivalry, suppression. Any odour may fuse with any other; non-odorous components of a complex (taste, pressure, temperature, sting) show various phenomena of fusion and rivalry according to knowledge, attention, etc. Odours may be

divided into pleasant and unpleasant; the feeling-tone is strong, and modifies the sensory experience; mixed feelings occur. The olfactory memory-type is rare; olfactory ideas are more frequent than is usually supposed, and may be cultivated (evocation of visual image, etc.). Weber's law is approximately valid; appearances to the contrary are due to peculiarities of the stimulus.] Literaturbericht.

'SCIENTIA' (RIVISTA DI SCIENZA). Series ii. Vol. xviii. Part 6. December, 1915. **G. Loria.** 'L'infinito e l'infinitesimo secondo i matematici dell'antichità.' [Historical sketch of the treatment of the infinitely small and the infinitely great by the Greeks. This article does not go very deeply into the matter. It is a mistake to speak of Zeno as 'living a little time after that of Democritus' ('*ben noto filosofo di poco posteriore a Democrito*'): Democritus was a disciple of Leucippus who in turn was a disciple of Zeno, and Democritus spoke of the doctrines of Parmenides and Zeno in his works. It may be mentioned that the relative dates of Zeno and Democritus are correctly indicated in Loria's book, *Le Scienze esatte nell'antica Grecia* (second edition, Milano, 1914, pp. 56, 65). Further, it is a mistake, as is very strongly shown by the work of Tannery and others, to refer only to the first two arguments of Zeno. This omission was not made in the author's book just cited. A further article will consider the revival of the scientific work on the subjects considered after the period of ignorance of the Middle Ages.] **Ch. Fabry.** 'Les atomes lumineux et leurs mouvements. 1ère Partie: La constitution de l'atome lumineux.' [This is a continuation of the author's article in the preceding number of *Scientia*. The notion of atom loses more and more its etymological meaning, for everything leads us to consider it as something very complicated. The constitution of the atom is written in characters which we are as yet far from being able to read easily.] **W. H. Bragg.** 'The New Crystallography.' ['The analysis of crystalline structure by the X-ray spectrometer opens up an entirely new method of describing the characteristic features of crystals. The new stands to the old in much the same relation as biological to systematic botany. Crystallography has hitherto consisted mainly in the relation of the outward forms of crystals, in the measurement of the angles made by the faces with each other, and especially in the observation of the particular degrees of symmetry which are present. . . . The new methods enable us to discover the actual arrangement of the atoms within a crystal showing us the fundamental characteristics of which outward form is a mere manifestation and consequence. By their aid we learn how atoms tend to arrange themselves so that their mutual forces are in equilibrium, and so we obtain information about these forces from a point of view which is not only new but is also far closer to what we want to see than any point which has so far been within our power to reach. The forces which bind atoms together are of course those which govern the formation of compounds, so that the new work is of prime importance to both chemistry and physics. The determination of crystal structure becomes more than mere observation of form,—an isolated and special study,—it becomes a means of increasing atomic and molecular science and links itself up with the main lines of advance of the present day.'] **R. Muir.** 'The Problems of the Future Peace.' [Preface to the English edition of Rignano's essay on *The Causes of the War and the Problem of Peace*, of which the Italian original appeared in *Scientia* for June and July, 1915. The preface is not much occupied with praising the many just and finely expressed things which Rignano said, but is, as Rignano wished, a perfectly frank criticism of whatever seemed disputable in the arguments and conclusions.]

IX.—CORRESPONDENCE.

In the January number of Mind a footnote appeared which it is as well to quote in full :—

"Dr. Mercier originally included in the above article an extended reply to Mr. Shelton's charge of plagiarism and other personal accusations. I have requested him to omit this reply on the ground that a continuance of such personalities in the pages of Mind is intolerable. In fairness to Dr. Mercier it is necessary to add that, in the opinion of the Editor, Mr. Shelton's charge of plagiarism is utterly baseless, and that his abusive language was quite unjustifiable and in every way regrettable. The Editor apologises to readers of Mind and to Dr. Mercier for having allowed such language to appear" (Mind, N.S., No. 97, p. 83).

A note of this character would appear to call for an explanation from me. Those who have read the discussion referred to will understand that I do not propose to make any elaborate defence of anything I have published either in Mind or in the *Nineteenth Century*. For them it will be sufficient if I say that I am prepared to repeat everything that I have published and that I have nothing to withdraw or defend. A few words are necessary in view of the fact that many who have read the note will not have read the previous discussion.

The Editor is pleased to talk about my "charge of plagiarism". That is not a correct description of anything I wrote. For several years past (since the year 1908) I have, in private discussion, in philosophical articles and papers, in a thesis offered to London University, of which sections have been published in several journals,[1] and in other ways continually urged that the branch of logical theory commonly described as methodology should be a subject having a direct practical bearing on the problems of science. I have, moreover, in several investigations, shown by examples that such a treatment of the subject, if undertaken by one sufficiently competent, can give results of considerable scientific value. In this attitude towards logical theory and towards science, I have encountered opposition from most of those commonly regarded as competent to judge and have received very little support. It follows therefore that anyone who adopts similar ground, whether competently or incompetently, successfully or unsuccessfully, must take account of my work. Anyone who fails to do so is open to the suggestion of plagiarism. It may happen that the individual in question applies the principle in ways with which I agree or in ways with which I disagree. He may agree with my applications or he may disagree. All this is irrelevant. He ought to be aware that the general position is one specially characteristic of a writer who was in the field before him, and, if aware, he should make due mention of the fact. These remarks are of general application to all concerned. So far as I am aware, they concern Dr. Mercier only with regard to the article he published in the *Nineteenth Century* in February, 1915.

[1] The central part of that thesis, much of it printed verbatim, appeared in the *Proceedings of the Aristotelian Society*, 1913-1914.

It is necessary for me to say publicly that the discussion referred to in the Editor's note was accepted by the Editor without protest and that I was not asked to modify it in any particular. He has the power of requesting that any feature to which he objects should be deleted, a power he neglected to use, either with me or with the previous articles by Dr. Mercier to which mine were a reply. I make no personal complaint of Dr. Mercier's language. It does not hurt me. But anyone who will read the whole discussion, both here and in the *Nineteenth Century*, will not accuse me of the more violent language.

H. S. SHELTON.

[It is true that Mr. Shelton does not speak of a "charge" but of a "suggestion" of plagiarism. But the suggestion seemed to me to be made in such a way as to place Dr. Mercier on his defence. He was virtually called on to clear himself on pain of being presumed guilty of plagiarism. Such a suggestion may be correctly called a charge. If and so far as the word "charge" may have conveyed a wrong impression (though I do not see how it could) I am sorry. The "suggestion" of plagiarism seemed to me baseless for the following reasons. The general idea of applying methodology directly to scientific problems cannot be claimed as novel by anyone at the present day. It is easily found in Descartes, Bacon, and Hobbes, and it probably suggests itself to most serious students of logic at some stage of their reading. Originality and novelty must therefore consist in pointing out new and specific ways of applying methodology in the present state of the sciences. Mr. Shelton claims to have done this, and I do not dispute his claim. What I affirm is that any serious charge of plagiarism must be founded on specific agreements so close and detailed as to make independent coincidence highly improbable. But Mr. Shelton, in his MIND discussion, so far from showing such agreements, indicates that in specific detail there is wide divergence between him and Dr. Mercier. With what he may have said elsewhere than in MIND I have no concern.

The reader must be left to judge for himself whether such a passage as that in which the words "noisy quack" occur is or is not abusive in the sense that it is personally insulting to Dr. Mercier. It may well be that Mr. Shelton did not realise in how offensive a sense his words would be naturally taken, and in particular that he did not realise how peculiarly offensive the word "quack" is when applied to a medical man, even though the application is to his logical work and not to his medical practice.

It is true that I ought to have asked Mr. Shelton to withdraw what he had written before publication. I apologise to him for failing to do so.—EDITOR.]

TO THE EDITOR OF "MIND".

SIR,—

May I reply in a few lines to Mr. De Laguna's heated attack on my notice (MIND, N.S., 95, pp. 421-422) of his *Introduction to the Science of Ethics*? I may say that this notice was quite different in character from what Mr. De L.'s language about it might suggest. It was in the main quite appreciative, though Mr. De L.'s curt declaration that "the remarks on the constructive portion of my work are at variance with fact" would lead an ordinary reader to suppose that he had been subjected to a savage and unscrupulous attack.

As to the particular points on which I am challenged, I must repeat my original assertions. I still consider it false to say "that Plato" ever

"tells the philosopher to put himself in a sphere where courage, temperance and even justice have no place". (I do not admit that my purely accidental omission from the sentence of the words "as far as he can" affects the issue.) If Plato ever tells the philosopher to do this, with or without a qualifying clause, why does not Mr. De L. confute me by quoting the passage? (As to the reference to *Republic*, II., Mr. De L. should have seen that II. is here a mere printer's error for VI.) I still hold that there is no justification for crediting Plato with "unmixed contempt for the masses of mankind". (I am obliged to Mr. De L. for pointing out the slip I made in writing *mass* for *masses* in my notice.) If there is evidence to justify this accusation "throughout the dialogues from the *Gorgias* to the *Laws*," why does not Mr. De L. quote some of it instead of indulging in guesses about my personal political leanings, which are impertinent both in the literary and in the colloquial senses of the word?

To my criticism that in the historical summary of Plato's *Ethics* no account has been taken of the *Philebus* or *Laws*, or apparently of any part of the *Republic*, except Book IV., Mr. De L. makes a rejoinder which is partly insufficient, partly irrelevant. He says that he neglected the *Philebus* and *Laws*—which is much like neglecting the *Critique of Pure Reason* in a professed account of Kant's metaphysics—on purpose. But my point was that neither he nor any other man has the right to call anything which neglects these works of principal importance an account of "Plato's Ethics". There can be no "pædagogic" justification for giving a *false* statement of Plato's views on Ethics, though I could understand "pædagogic" reasons for not giving any statement at all. As to Mr. De L.'s retort on the other point, that he *had* used *Republic* IX. in his discussion of differences of quality among pleasures, it is quite irrelevant. I did not say that he had made no use of other books of the *Republic* than IV., but that he had not used them in his "account of Platonic Ethics". A writer who overlooks so important a qualification in a criticism to which he makes a reply is hardly entitled to adopt the tone Mr. De L. has thought it becoming to employ.

A. E. Taylor.

July, 1916.

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